Skyscapes, Landscapes, and the drama of Proto-Indo-European myth

PhD Thesis by John Grigsby

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Abstract

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Following the work of Larsson and Kristiansen's 'The Rise of Bronze Age Society' (2005) that utilised Indo-European myth to shed light on the iconography of Bronze Age Scandinavian art, this thesis postulates a similar relationship between Proto-Indo-European mythology and the ceremonial sites of the British Neolithic, arguing both, at root, share a derivation from astronomical imagery, which suggests the 'skyscape' was as important to the builders of these monuments as the 'landscape', if not more so.

The mythological material utilised in this study is reconstructed using extant comparative Indo-European literature and is based on comparative linguistic reconstructions, while the archaeological data is taken from 55 sites (50 henges or associated circular timber structures, and 5 passage graves). The hypothesis that such structures are oriented on astronomical events is tested, with specific case studies explored in detail (Stonehenge, Avebury henge, the Sanctuary, Woodhenge, Thornborough, Bryn Celli Ddu, Barclodiad y Gawres and Yeavering). The analysis demonstrates a concentration of alignments on the rising and setting of certain stars within the Milky Way (those of Cassiopeia and Crux) on or around the Winter Solstice, on the rising and setting of Orion, and with the rising of the sun as it crosses the Milky Way around the start of May. These alignments often utilise local landscape features such as hills (or artificial mounds) and rivers and are linked to ritual deposition of cattle remains – all facets that can be explained in terms of the Proto-Indo-European cosmology reconstructed within this thesis, which, it is argued, is ultimately of Neolithic Near Eastern pedigree.

This thesis not only provides evidence of a Neolithic 'shaping mythology' that Richard Bradley in his 'On the Significance of Monuments' (1998) suggested might lie behind the form and function of ritual sites, but also suggests that astronomical symbolism (especially concerning the Milky Way) was at the heart of both this Neolithic myth and the rituals performed at such sites.

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Acknowledgements

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Author's Declaration

The entirety of this work is the undertaking of the author, and while it draws on the work of a number of previous scholars, any fault in this thesis is to be laid at my door, not theirs.

Dedication

For my parents

‘The planning of monuments, and even that of whole settlements, often encapsulates a more general perception of space: one which is shaped by mythology as much as topography.’

Richard Bradley - *On the Significance of Monuments* (1998, p.108

Introduction

The ritual monuments of the British and Irish Neolithic and Early Bronze Age have been of interest to antiquarians and archaeologists for more than three centuries. During that time, they have been interpreted as temples, sacred enclosures, burial places, meeting grounds, and trade centres in a way that emphasizes their possible functions and purpose (Stukeley 1740; Petrie 1880, p. 31; Hawley 1921; Childe 1957; summarised in Burl 2007, chapters 1-2; and Darvill 2008, pp. 32-56). In recent years, a great deal of attention has focused on their landscape context, spatial relationships, and the experiences that the people who built and used these may have had (Tilley 1994; Thomas 1999). All these approaches are important, but two further potentially significant dimensions have been neglected. First, is the complement of the landscape: the skyscape (Silva 2015, p.3); these monuments exist at the interface between the earth and the sky and may thus have been structured and designed around celestial ‘geography’ and movements in the heavens as much as by terrestrial. Second, the likelihood, delightfully expressed by Richard Bradley in a passage cited at the head of this report, that ultimately it was *mythology* as much as topography that structured the placement, planning, perception and performability of these monuments. What can be seen and recorded in the field today must be explained with reference to what people were thinking and how they condensed their understandings of the very workings of the universe into physical structures. This thesis therefore aims to build on the work done within the field of landscape archaeology by integrating it with investigations into the role of skyscapes and myths as a way of better understanding Neolithic ceremonial monuments in Britain and Ireland.

Background, literature review and methodology

i. Changing archaeological practices

The absence of contemporary information regarding the use of, and ideology behind, the ritual monuments of the British and Irish Neolithic and Bronze Ages means that those wishing to shed light on the world-view that may have shaped them rely on many differing approaches and methodologies, resulting in widely differing interpretations. This attempted interpretation can be traced back to the work of John Aubrey and William Stukeley (who saw the monuments of Stonehenge and Avebury as temples for a pre-Roman druidic priestly class, and of possible astronomical significance) who stand at the head of traditions that continued down through the eighteenth and nineteenth centuries [Petrie 1880, Lockyer 1906, and Childe 1957]. Whilst interesting, such work suffered from poor dating of the sites and material culture, and rather modest levels of information about the lay-out and structure of the visible monuments. But since the 1950s, we enter a modern era where some of these issues have been resolved through a series of practical and theoretical changes as described by Colin Renfrew in his book *Before Civilization* (1973).

Dating was especially important for working out the sequence of structures in a landscape, and for judging which sites were potentially contemporary with which other sites, so that explanations of their siting and use could be placed within an accurate framework. On a broader front, the re-dating of megalithic building traditions within the broader development of Continental European and Atlantic cultures was especially significant (Renfrew 1968; Cunliffe 2001). Rather than looking for vague parallels with Near Eastern or Mediterranean sites to help with dating it is now possible to see how the regions of the world, as it was in earlier millennia, fitted together.

One result of this re-dating was a change in attitude towards the monuments: before, they had often been regarded as either creations of a foreign culture or poor relations of them; Inigo Jones had suggested the site of Stonehenge was Roman (Jones 1655) while Atkinson had argued for a Mycenaean pedigree (1956, pp. 163–4); now it was realised that not only were these sites built without reliance on other civilizations – they had in many cases preceded them (Renfrew 1968). However, as a result, prehistorians no longer had a known context within which to place such

sites; as Burl points out, they no longer had the certainty of such as Colt-Hoare who had declared 'We speak from facts, not theory.' (1979, p.202) This lack of cultural context, however, has not stopped archaeologists from discussing the 'purpose' of the monumental building traditions, with Burl as a good example (though writing thirty years ago his work appeared before the stricter modern climate), though usually (with regards to discussions of 'purpose' of the sites) we are looking at a few chapters in larger works. Those works that do discuss purpose concentrate on function and ideology, such as Bradley's insightful book *The Significance of Monuments* (1998), seek more a mechanism and reason for adoption of the building traditions, and discuss the origins of their form, rather than attempting to define exactly what may have gone on at these sites (a scenario not reflected in the plethora of theories of 'use' suggested by non-academic authors, such as Dames (1978)).

ii. New perspectives in archaeology

In lieu of an extant cultural/mythological context for the sites, academic research began to concentrate on the evidence it had to hand – that gleaned through excavation and survey - but sought to contextualise these findings through the application of comparative sciences such as anthropology, ethnology, sociology and evolutionary ecology. The re-dating of the British megalithic cultures coincided with a similar reformation in the subject of archaeology itself: New Archaeology (*aka* processual archaeology) that endeavoured to draw on broader scientific methods of analysis. The wider (and more humanities-based) questions of what religion or mythology the megalithic builders might have possessed, then, began to decline in popularity. Aubrey Burl, however, was one of the few to buck this trend, being still willing to talk of the nature of prehistoric belief, and to bring in modern anthropological theory alongside rural British folklore to paint an image of antlered medicine men presiding over sexual rites of fertility in what was a colourful, if conjectural, reconstruction of the rites of the henge builders (1979, pp.202–227). Burl's work drew on New World and African parallels (*ibid*, p.214), as well as evidence gleaned from Scandinavian petroglyphs (*ibid*, pp.222–225), though his use of vernacular mythology and folklore is now more frowned upon. In the new scientific climate such reconstructive scenarios were to be discouraged as 'fanciful' and based on questionable use of sources. Yet popular authors, unhampered by such academic confines, took Burl's example and continued to speculate.

In comparison, the theories of many academic prehistorians concerning henges, to use one example of ritual monument, might seem to lack colour, yet they cannot be faulted for academic rigour; some have seen such sites as gathering places reflecting social patterns; as centres for ritual exchange in the axe-trade (Bradley and Edmonds 1993, Houlder 1976, pp. 55–62); as staging posts on pilgrimages and/or preparation areas for visits to other, natural, places of

worship (Loveday 1998, pp.14–31); or models of the cosmos: the circular horizon experienced by the individual – (Bradley 1998, pp.116–131) or the three-tiered cosmos derived from visionary experiences rooted in the physiognomy of the brain (Lewis-Williams and Pearce 2009); others suggest they were meeting places performing all the functions of a modern church or parish hall. Aspects most scholars agree on is that henges were not defensive sites – as their bank was not inside their ditch - though some suggested that they were defensive against something *within* the henge itself (Barclay 2005, pp.81–94; Hodder 1990, p.264), something perhaps sacred, or feared, or both. Thus, we see, using the example of the henge, how thinking concerning ritual sites has developed as innovative approaches have added possible layers of meaning over time, and continue to be added.

iii. Cosmology

Emerging from a lot of research undertaken in the later 1990s and early 2000s is a focus on cosmology as a critical theme. Repeating Richard Bradley's words noted at the head of this paper: *'the planning of monuments, and even that of whole settlements, often encapsulates a more general perception of space: one which is shaped by mythology as much as topography'* (1998, p.108). It's a theme that has informed two recent approaches to understanding Stonehenge, for example, both of which supplement the archaeological evidence with results from other lines of inquiry. Parker-Pearson and Ramilisonina use ethnographic parallels involving the role of stone and wood in the latter's Malagasy Culture to suggest Stonehenge was the place of the ancestral dead, and the landscape divided into two 'domains' - one of 'living' wood, the other of 'dead' stone - linked by the river Avon (1998). But the theory is of questionable applicability and reveals the limits of the ethnographical approach. Rather different is the work of Darvill and Wainwright who draw on local legends, folklore, and oral traditions in southwest Wales and Southern England to suggest that the Bluestones were brought to Stonehenge from the Preseli Hills of west Wales because of they were believed to have healing properties (2006, p.146; 2009). Drawing on local legends/mythology and the idea of long-distance transmission of knowledge is a potentially powerful explanatory tool for prehistoric studies that has been under-used in recent decades, with Kristiansen and Larson's ground-breaking study showing what can be achieved through such an endeavour, which provides an optimistic rejoinder to Whitely's observation that 'Ethnohistorians have now long realized that oral traditions contain a great deal of consistently reported information, with strong internal standards of verifiability. That message, apparently, has not yet fully crossed over the divide from sociocultural anthropology to archaeology.' (2002, p.412).

iv. Archaeoastronomy and Skyscapes

One major branch of modern research is based on the premise that sites were linked with astronomical occurrences - though most are not 'finely tuned' enough to have functioned as accurate 'observatories' in the modern sense of the term (Ruggles 1999, pp.142–3). Stukeley was the first person in recent times to notice and record his observation that the alignment of Stonehenge was solsticial – 'being the point where the sun rises, or nearly, at the summer solstice' (Burl 1983, p.9) and from this time forward such alignments became the focus of many studies. In 1906 Sir Norman Lockyer published a work entitled *Stonehenge Astronomically Considered* arguing for its use as a calendar. It was the post-war period, however, that saw the flourishing of archaeoastronomy proper. In 1965 Gerald Hawkins theorised that Stonehenge had been not just an observatory but a prehistoric 'computer' that could have been used to predict eclipses (by an ingenious use of the 56 Aubrey holes – a theory now discredited) (1974); this came at a time when Newgrange was in the process of excavation by O'Kelly (from 1962-75) who posited an alignment of the chamber on the midwinter solstice sunrise. This connection between the tomb and the midwinter suggested the astronomically defined calendar as posited earlier for Stonehenge was as much involved with rites concerning death and rebirth as with, say, planting and harvesting as the summer alignment at Stonehenge had suggested to some (though ideologically they were perhaps connected in the mindset of the tomb-builders).

The 1960s and 1970s saw a wealth of new theories from Alexander Thom whose work would do more than any other to fix in the popular mind the idea of prehistoric man as astronomer. His research suggested a common unit of measurement for megalithic sites (the still controversial 'megalithic yard') as well as suggesting evidence for alignments at sites on not just solar events, but lunar and stellar alignments too; he suggested the existence of a ritual year defined by the two solstices, equinoxes and quarter days. (1954; 1967)

The idea that prehistoric man was obsessed with the celestial bodies and events in the heavens continues to this day, though the idea of the circles as calendrical observatories of astronomer priests is now out of fashion (ethnology provides little evidence for 'astronomer-priests' in other world cultures to match those imagined in Prehistoric Britain). Clive Ruggles, the most respected and industrious of modern archaeoastronomers suggests the astronomical alignments found in the ritual sites were a function, not the purpose, of the monuments (1999). They provided setting and timing for ritual, rather than being the *raison d'être* of the sites construction. The work of Ruggles has been instrumental in curbing the worst excesses of the obsession with seeking celestial alignments apparent since Thom's days; North's *Stonehenge: Neolithic man and the Cosmos* (2005), for instance, seems to over-egg the pudding by presenting an over-whelming plethora of alignments throughout the Neolithic that seems to

prove the criticism sometimes levelled at archaeoastronomers that given the thousands of visible heavenly bodies viewable by the naked eye any terrestrial monument will surely align with the rising or setting point of some star or another, a criticism that will be taken on board during the writing of this thesis. Ruggles argues for caution in making claims for alignments, and this is important – because in lieu of a cultural context, posited alignments are one of our biggest clues to reconstructing the shaping cosmology of the monument builders, though we will have recourse to argue firstly what we mean by alignments, as the idea of an exact pin-point alignment to a transitory horizon event needs to be replaced with something more workable and evidenced ethnographically – rather a 'window' than a pin-point, both in space and time, as will be discussed below.

However, if, instead of concentrating exclusively on the object remains, we consider the astronomical orientation of sites as important and expressive of ritual, we find ourselves at an advantage - for the alignment of a site to natural features, such as twin hills, or to events in the heavens, is something that can survive previous impacts to sites, such as vandalism, previous excavations or even destruction; as Ruggles points out:

> 'This problem [of loss of evidence due to decay] is far less critical in the sort of analysis where we are concerned with the relationship of monuments to immutable astronomical phenomena or physical features in the landscape; here conclusions can be more reliably based upon the sample of monuments that remain.' (1999, p.156)

And that:

> 'repeated aspects of their location in the contemporary landscape may reveal common elements of ritual tradition (and hence world-view) that can be identified with some confidence as something that was intentional and meaningful. Despite the fact that they have long been ignored by most mainstream archaeologists, analyses of orientation and possible astronomical associations may be particularly useful in this regard.' (*ibid*, p.156)

Alignments, shape and orientation also can survive in a context where no artefacts remain and can be gleaned without the need for excavation or even a 'visible' monument (through crop-marks, geophysical survey and photographic or other record of a site now destroyed). As an interpretative tool, then, astronomical orientation can offer a great deal of potential information without the necessity of expensive, and ultimately destructive, excavation. Astronomical evidence can, then, potentially provide more clues to a wider worldview; it may help define the timing of ritual observances, cosmological patterns: 'common elements of ritual tradition (and hence world-view)' (Ruggles 1999, p.156) in ways objects alone cannot.

Archaeoastronomy, then, despite inhabiting what Silva has called an 'interdisciplinary 'no-man's land'' (2015, p.3) which has led many, who view it as overly-conjectural to 'shy away from it' (Hutton 2013, p.150), has added an extra dimension to the study of ancient sites, and has been used to support some of the theories put forward concerning their use, especially those

that suggest they were locales for rites based on a seasonal cycle (though, as in the case of the Metonic cycle reflected at Callanish, other cycles may have been as important – the sun may describe a yearly farming cycle, yet other heavenly bodies might be more appropriate, say, for describing the human life cycle, or parts thereof). Yet modern archaeoastronomy still falls foul of the idea of astronomical alignments as accurately measured and timed observances of horizon phenomena. By singling out individual sight-lines, and extrapolating from them, some archaeoastronomers or those utilizing their work, have proposed several differing theories on prehistoric religion – as solar, lunar, both, or neither (though rarely, stellar); yet no one theory has been found that fits all sites. Those who propose certain, narrow, astronomical theories fail to explain why most sites do not show similar alignments; why, for instance, if Neolithic man marked the midwinter sunrise as 'special' (as evidenced at Newgrange) why do Stonehenge and Maes Howe seem to align to the *sunset* on the same day? If the selector is more broadly solsticial, then, what decides whether a site be aligned to the sunrise or sunset, summer or winter? And what of those many sites whose axis falls outside of any solar or lunar arcs? In this thesis it is proposed that we reject the singular, linear idea of closely observed alignments and instead concentrate on what Silva and Henty call 'skyscapes' (2015). This innovative approach has resulted in the production of a new journal (The Journal of Skyscape Archaeology (JSA)) that offers a pioneering angle to discourse on ancient monuments.

Skyscape archaeology provides the framework for thinking about the dome of the heavens above the earth. It allows consideration of broad connections with the changing patterns in the heavens. Orientations towards both broad and precise astronomical events can be accommodated, as are events played out over time (i.e. the actions of a heavenly body/bodies through an entire night or season) for it is the unfolding 'drama' of the changing heavens that is important, not just a single moment. In this way widely-differing alignments or aspects of sites might still fall under an all-encompassing *aegis* of 'ritual time', perhaps pointing to different moments in the same 'drama', and therefore be connected by an overlying ritual pattern that a narrower analysis might simply miss. Henty's research on recumbent stone circles is a case in point, showing these sites encompassed stellar and solar references, not just the previously thought lunar (2011a), suggesting a broader field of interest - a wider pattern is involved. Yet the nature of this wider ritual pattern, this 'shaping mythology' needs to be realised, which is the aim of the second arc of this thesis.

v. In Search of Myths

The second element of this research concerns integrating landscapes and skyscapes as inherently archaeological components with evidence for the mythologies that can be reconstructed for the fourth and third millennium BC in northwest Europe along the lines that Richard Bradley has

encouraged us to look. Expanding the lines already quoted he says: 'I would argue that this… reflects a shared perception of the world, a prehistoric cosmology. It is all too easy to lose direction here, but *it is quite possible to identify the existence of such a system*… the planning of monuments, and even that of whole settlements, often encapsulates a more general perception of space: *one which is shaped by mythology as much as topography*.' (1998, p.108; *my emphasis*)

As Bradley rightly points out the existence of a system of cosmology is identifiable, but the difficulty lies in identifying its exact nature; yet if we are to progress, we cannot simply admit ignorance; nor should we let the fact we can never go beyond conjecture stop us before we start. Our aim is to suggest a cosmological system that helps explain the morphology of ancient sites; that fits the known evidence and furthermore allows us to better interpret other, perhaps previously obscure, facets of them. We will never know for certain whether our conjectures are correct, but if they fit the archaeological evidence then it raises the possibility of the underlying system having been recognised, and this is a starting point for future research.

It is with this aim in mind that a re-examination of Indo-European mythology (IE) is proposed to examine it for elements of a possible Neolithic 'shaping' mythology. On one hand this seems a reasonable proposal, for the IE myths are the oldest extant mythological system we possess, and in the case of Celtic myth does contain reference to ritual sites of the fourth and third millennia BC. However, the main stumbling block is the fact that IE culture and languages are usually thought to have arrived in Britain during the Bronze Age, and thus have little to say about preceding megalithic cultures. Yet many of the same scholars who argue for a Bronze Age floruit recognise that certain motifs in the myths don't fit the expected pattern of a pastoral nomadic warrior-derived mythological system; such anomalies are deemed 'earlier' (that is, culturally earlier), they are relics of aboriginal Neolithic farming cults absorbed into the body of the Bronze Age myths as the IE cultures, spreading from out of the Pontic-Caspian Steppes, came in to contact with, and were influenced by, Neolithic cultures (see 1.1); elements of Neolithic mythology, then, were assimilated along with certain agricultural practices, and can be recognized as a clear and identifiable stratum in surviving IE mythology. This alone gives us a reason to examine these myths for such 'older 'elements; yet there are other premises that might explain their presence that also argue for a re-examination: one such premise is that the Neolithic core of IE mythology is not borrowed but aboriginal, because IE culture (and therefore mythology) was Neolithic, as suggested in Renfrew's 'Anatolian hypothesis' which states the IE languages had originated in Anatolia and spread with the practice of farming c.7000 BC (1997); another possibility is that the Neolithic elements in IE myth were cultural acquisitions resulting from interactions with neighbouring farming communities prior to the diaspora of IE speaking cultures from the Steppes; either way, given the dearth of direct

mythological evidence, the possibility that elements of a Neolithic cosmology survive within IE myth, whether borrowed or derived from an indigenous Neolithic core, merits its reappraisal.

vi. Aims and Objectives

The aim of this thesis is to identify and reconstruct the 'shaping mythology' (*after* Bradley 1998, p.108) that lies behind the planning and use of ceremonial sites during the Neolithic period in the British Isles. The twin sources of reconstructed proto-Indo-European (PIE) mythology and archaeoastronomy will be used to assess the recorded archaeological evidence at investigated sites. The primary question is simply whether the imagery, symbolism, and cosmologies represented in PIE mythology contributes anything to the understanding and interpretation of the structure and use of the ceremonial monuments in regard to their landscape context and in relation to what Silva (2015) has usefully termed the 'skyscape'.

Objectives

- The first objective will be to argue that remnants of the worldview of the first Neolithic farmers can be reconstructed from an investigation of Indo-European (IE) literature, which itself stems from a parent mythology of the Proto-Indo-Europeans (PIE). Scholars, including Mallory (1989, 2006) and Lincoln (1991), have argued that certain motifs and images that appear in IE myths were borrowed from neighbouring Neolithic farming/cattle-rearing societies by the IE-speaking peoples during their geographical expansions, and therefore offer a glimpse in to the Neolithic beliefs. An alternate view of the origin of these motifs can been put forward based on Renfrew's Anatolian hypothesis (1987), which argues that PIE culture and language were themselves Neolithic in date; in which case the Neolithic material found within the myths would more likely be indigenous rather than introduced from external cultures. This section will question the validity of both theories and ask whether any other explanations for such Neolithic inclusions in IE myth might be postulated, such as influence from neighbouring farming cultures *prior* to the PIE diaspora.

- As part of the above it will be necessary to identify the specific contents of IE myth that are usually considered as belonging to the 'Neolithic' strata (i.e. the tricephal/serpent/dragon and the cow-goddess, motifs identified as such by Lincoln 1975; 1976). A dendrograph will be constructed to help identify the possible age, origin and spread of the motifs (i.e. a motif would be defined as PIE if it appeared in all or most branches where later contact between branches might be ruled out); this would allow us to gauge whether the Neolithic strata was present at the PIE stage of culture or arrived later during later IE expansions. The myths chosen for this analysis, as stated

above, will be the those identified by Bruce Lincoln (1975; 1976; 1991) as being most primary and central to Indo-European thinking:

(i) The cosmogony and anthropogony embedded in the creation of the cosmos and mankind through the primal sacrifice of the god **Yemo* ('Twin') and an accompanying bovine.

(ii) The cattle (or 'soma') theft/dragon slaying myth

This research should allow a reconstruction, albeit a tentative one, of elements within IE tradition that might be Neolithic and which, theoretically, accompanied the spread of cereal-farming and cattle-husbandry from Anatolia northwards and eastwards through Europe and Asia.

- The second objective will be to take a close look at several key Celtic mythological texts and related folklore to see to what extent the Neolithic-derived IE symbols discussed above (cosmogony/cattle-theft) are present, and in what state of preservation. This closer look at a single branch of IE myth, from within the same geographical area as the ceremonial sites that are the focus of this thesis, will aim to tease out more details concerning possible links between the myths and the ceremonial sites in question, asking whether such sites may have been the focus of ritual activity based on myth. The validity of drawing on IE myths (and later folklore) in the case of the British sites rests on whether they can be shown to display features (aside from folklore and nomenclature, which may have been imposed on them at a later date) which suggest shaping by elements within the IE (or P-IE) mythological worldview, as has been argued for cultural and artefactual assemblages of the Danish Bronze Age by Larsson and Kristiansen (2006).

- Having identified the basic structure of the Neolithic mythologies found in P-IE tradition, suggested a reconstructed P-IE mythology from them, and compared them to motifs found in Near Eastern myths, the possible 'meaning' of the motifs needs to be analysed. This section will concentrate on astronomical imagery present which might help to suggest both how the myths might have been 'utilised' (i.e. enacted in ritual) as well as suggesting a likely place and time for their formation. The well-considered astronomical basis of many mythical motifs in Near Eastern (especially Egyptian) mythologies will be applied to the reconstructed P-IE myth to see if they are present, and if so, what the implications for this might be in relation to the ritual structures of NW Europe in terms of function and orientation.

- The third objective will be to analyse a wide sample of ritual sites (including henges and a small number of passage graves) consisting of both those within recognized ceremonial centres (e.g. Orkney; Stonehenge/Durrington; Avebury; Newgrange; Thornborough) as well as other sites where the preservation is good and dating evidence has been carried out; and picked from as wide a geographical distribution as possible. These sites will be examined to discern if the orientations of their entrances or other features (such as standing stones, timbers, passageways) align to key features of the skyscape (i.e. rising/setting of heavenly bodies) and/or landscape (i.e. relationships to surrounding hills, mountains and rivers or other monumental features). From these statistics the appearance of any recurring patterns suggestive of a shared 'tradition' or 'purpose' can be ascertained.

- Having defined a series of features considered integral to the (P)IE worldview (objective two) and a series of features common in ceremonial site orientation/form/ritual deposition (objective three), the fourth objective will be to examine if the two sets of features might be linked, i.e. whether IE or PIE mythological imagery/symbolism might have influenced the form and placement of British and Irish sites and overall posited use of ritual sites in any way correlates to the reconstructed mythology and suggests a workable hypothesis for the function and design of sites. It will include an analysis of the symbolism of Long Barrows, cattle and water symbolism; before asking whether there is evidence (i.e. pottery decoration, art, settlement orientations etc) of the spread of such symbolism from the Near East with the practice of farming.

Ultimately, I will hope to provide an overview of the mythical symbols of the Neolithic of Atlantic Europe which can be linked together to illustrate a cosmological narrative such as Kaul (2004) has done for the diurnal solar-ship motif of the Danish Bronze Age; the research will demonstrate whether the sites and iconography found in the British Isles fit this reconstructed pattern to a meaningful extent, and to what extent the placement of sites within the landscape and skyscape, and of objects within them, be read as a narrative, as embodying in time and space elements of a ritual drama.

vii. Bridging archaeology and myth – in search of a methodology

This thesis deals with two disparate sources of evidence – textual (mythology) and archaeological (Neolithic ritual sites) - and seeks a methodological approach whereby common underlying symbolism, albeit expressed in differing forms (verbal and physical) might be

identified. Such an approach not only requires a valid method of identifying and explaining the meaning behind such symbolism, but prior to this an initial process of discerning what evidence (textual and archaeological) is relevant, valid and usable, i.e. what myths and sites are to be selected, using what criteria. The methodological challenges of such a process are outlined below, beginning with the approach given to selecting and reconstructing a Neolithic mythology, followed by the approach to selecting and analysing sites.

Reconstructing Myth

The reconstruction and study of old mythologies as a source of ancient religious practice (which within the British academic scene includes what is sometimes called folklore studies, but elsewhere its often known as ethnography) is a field that has undergone major redevelopment over the last century (Dundes 1984). While many early works were fanciful and relied on over-simplified comparisons (such as Frazer's The Golden Bough and works by and influenced by the Cambridge ritualists such as Jane Ellen Harrison and Gilbert Murray (*see* Segal 1998)) more modern studies of the origin and meaning of myth such as those of Dumezil and Lévi-Strauss have drawn on a greater understanding of ethnology and society (ancient and modern), while others have sought psychological explanations for its origin (Freud 1913; Jung 1956, Neumann 1949; 1951). More recently, after Dumézil, a number of scholars have investigated the appearance of common IE themes in various European and Eastern myths and used them to suggest something of the nature of ancient IE religion and society, most notably Rees & Rees (1961), Watkins (1995) and Lincoln (1975; 1976), while the works of Carey (1990; 1991), Puhvel (1987) and Brenneman (1989) clearly define the vernacular Celtic myths (those most often associated with Neolithic and Bronze Age ritual sites) as unequivocally IE, even if the material culture they describe is medieval. Yet as already stated, the consensus view of the origin of the IE languages is that it is post-Neolithic, and much of the work done on the mythology has been to interpret it as a Bronze-Age phenomenon, accordingly, culturally earlier (Neolithic) material clearly present within the myths has been neglected on the basis that it must be a later, foreign, interpolation. If such material truly is a remnant of an older belief system, however, it merits serious study, for it would shed light on the previously unknown mythic traditions of that period.

PIE origins – the dendrographic approach

The first task undertaken in this thesis, then, is a reconstruction of Proto-Indo-European (P-IE) mythology and an examination of this for elements that might suggest a Neolithic origin. This task draws on the methodology previously used by Mallory and Adams (2006), amongst others, to reconstruct the P-IE lexicon. Through such a comparative method the form of the original

language can be tentatively reconstructed by identifying and tracing analogues found in differing IE languages back to an original proto-form. Similarly, mythological names, images and concepts found in the varied branches of IE literature can be traced back to a postulated root mythology (Jackson 2002; Mallory 1987; Mallory and Adams 1989). Yet the vast number of extant IE myths makes such a task onerous. There are myths that cover all aspects of life, human and animal, natural and supernatural, and it is beyond the scope of this thesis to study them all. Instead, this study focusses on what Lincoln has argued are the two core myths of the P-IE culture – the cosmogony and the cattle theft (Lincoln 1975; 1976), whose widespread appearance in many IE myths suggests an early origin as well as a continued cultural importance. These core cosmological myths (which deal with creation and, as we will see, seasonal death and rebirth) also happen to be the myths most likely to form the basis of religious practices and rituals at religious sites, as a cursory examination of Near Eastern equivalents will show.

The method involved in analysing the motifs present in myths begins with an examination of the form and development of the mythological traditions utilised by Lincoln and others. This has been done through the creation of a dendrograph (*see* Appendix 1) which presents a 'family tree' of mythological images. The primary aim in constructing this dendrograph is to illustrate the relations between the literatures for comparative purposes, that is, to see if any patterns are discernable in the origin and spread of certain mythological motifs, and to attempt to postulate the reasons for that formulation/spread and a possible locale and date of origin. The dendrograph is itself based upon an initial map (Map 1, Appendix 1) illustrating the conjectured relationships between the different linguistic branches of the Indo-European language group (Map 2, Appendix 1). Proximity of languages to one another, whether geographical or linguistic, suggests the possibility of shared institutions and traditions which we might see further reflected in the literature/mythology of each region. Thus, both linguistic and geographical proximity can act as a justification for comparing mythologies. However, relationships between language and literature within the IE group are not limited to geographical or linguistic proximity: temporal proximity is also of importance. Geographical proximity does not necessarily guarantee a correlation between literatures, nor do great geographical distances preclude it. The Irish and Hindu myths, for instance, though at separate ends of the IE world contain many striking similarities (Rees and Rees 1961, Puhvel 1987), perhaps due to the preservation of early-dispersed material on the peripheries of the IE world representing an initial cultural advance. Precisely the same mechanism is used by linguists to explain how Tocharian, the most easterly of Indo-European languages, is more closely linked to the most westerly, the Celto-Italic group, than its Indic neighbours (Forston 2010, p.401), indicating an early original familiarity and split from the Celtic languages from an original

('Tocharo-Italo-Celtic') group ((Forston 2010, pp.58–9; Mallory 1991, pp.21 and 61). If such an argument can be used linguistically there is little quarrel in using it mythologically.

One major obstacle to overcome is the assumption that 'earlier' means 'better' and thus that the earliest written IE sources, Hittite cuneiform scripts (3000 years old, see West 2007, p.12), for instance, ought to be 'closer' in form to the original P-IE mythology than, say, Baltic folktales collected and translated in the last two hundred years. But, while there has been a discernable amount of later Near Eastern influence on Hittite myth, the Baltic material comes from a linguistic branch deemed hyper-conservative amongst linguists and from a geographically remote and isolated area (Mallory and Adams 2006, p.24), and thus provides a relatively uncorrupted P-IE mythological material, of greater use in reconstructing a P-IE proto-myth than the Hittite. This will prove important when considering the contents of the relatively 'late' (medieval) and equally isolated and remote Celtic literature, the tradition most closely associated with the ritual sites central to this thesis.

The reconstructive method presented here is based on a comparative approach to mythology, i.e. using one mythological tradition to flesh out and support often fragmentary or missing motifs in another. It has been tempting in the past to utilise such comparative mythology indiscriminately to find parallels, irrelevant of their origin or context, to support a given thesis (criticisms aimed at such as Eliade, Jung and Campbell, (Northrup 2006)); but such comparisons require clear justification. Clear reason must be given as to why certain mythological traditions and not others are being used. One aim of the dendrograph is to provide such evidence in a clear visual format, displaying the relationships between the disparate mythological branches from which comparisons might be drawn, showing such comparisons lie on a foundation of shared origins.

As well as providing the justification for comparisons of motifs, the dendrograph is useful in plotting their putative geographical and temporal origin. Does, for instance, a motif occur in all or most extant branches, suggesting an ancient shared origin, or does it occur in one region alone? If the latter, might such geographical limitation indicate later borrowing from an external source, or might it perhaps represent the last vestiges of a primary tradition that has disappeared elsewhere due to geological or cultural incompatibility or change? The limited appearance of a motif within the spread of literatures, then, might not necessarily be an indication that the motif is a later accretion or adaptation. However, accretions might be indicated if it can be shown they occur where IE cultures have moved into an area in which such motifs were already present, or where neighbouring non-IE cultures were in a position to influence the myths of their IE neighbours through cultural contact or inter-marrying, for example (one thinks of the syncretic Greek/Egyptian deities such as Zeus Ammon or Serapis of the Hellenistic era (Martin 1983))

A caveat must be included here regarding the correlation between Near Eastern, especially Egyptian, myths and those of the IE world. It will be part of the discussion as to whether an association exists between P-IE and these other mythologies, be that through an original shared derivation or later influence. The dendrograph used in this study is since myths develop and change, and the same is true of Near Eastern myth. When I refer to Near Eastern and Egyptian mythologies this is done with the understanding that there is no such thing as 'Egyptian myth' per se, as a static entity; what we might term 'Egyptian religion' is a conglomeration of local cults that developed over time and that became progressively more centralised and synthesised (see Hornung 1982 and Morentz 1973 for an overview); even so, differing cosmologies continued to exist side by side, even in the later periods, while at the same time older, local, gods became amalgamated with those of different regions. This does not nullify using Egyptian religious imagery comparatively, however, as where such amalgamations existed, one can argue for a continuation of form through a change of substance (old wine in new bottles, as it were), with syncretic borrowings occurring where underlying likenesses, due to similar geographical and cultural origins, already existed.

In Search of Origins

As regards the source of the mythical motifs reconstructed in this thesis, and why subtle changes occurred in them over time, I make no apologies for looking to astronomy for answers. That astronomical imagery is present in many world myths is generally not questioned, being an obvious inclusion in any system of cosmology (of which myth forms part) that is rooted in the phenomenal world; such an approach has been utilised by many scholars including Kerenyi (1976, pp.35–52), Eliade (1971, pp.5–11), de Santillana and von Dechend (1969), and Sullivan (1997). While rejecting any analysis that states that all mythological motifs are astronomical (such as Müller 1861), or that they represent an attempt at primitive science or a 'code' to be deciphered, I will show that many actions in myths are best interpreted as astronomical, especially when such myths portray seasonal changes and cosmogonical themes. Importantly, and this cannot be over-stressed, slow changes in observable seasonal patterns occurring over time due to the phenomenon of precession (see 2.52) which alters the position of the fixed stars, thus changing the background against which calendrical events are viewed (for example the constellation against which the sun rises at the spring equinox) indelibly change the perceived cosmos and thus the cosmology. Accordingly, a mythology derived from cosmological imagery will have to be altered to reflect the new cosmic pattern, while also providing an explanation for the change in the form of a narrative, one that contains references to both the old and the new form. Such changes in myth, if they can be linked to definite astronomical events, can provide

clues to the date of both the original formation of mythical imagery and subsequent alterations, and this is something that will be described and utilised more fully in the main text.

Boutsikas stresses that even in the earliest Greek literary works (Hesiod's Works and Days, for example) there is a

'tight connection between mythology, cosmology and astronomy... Almost all the night sky was depicted in Greek mythology and vice versa; the myths were mapped onto the heavens…The naming of constellations after mythological creatures, heroes, or gods in itself, demonstrates a close relationship between religion and astronomy.' (2007, p.48).

The sky was one aspect of the cosmos experienced by the peoples of the past, and so it is no surprise that astronomical motifs occur widely in myth. The changing appearance of the heavens over the seasons provided a slowly shifting, but constant framework against which the motions of other heavenly bodies across the sky offered a cyclic, repetitive pattern, a narrative, almost, that in the case of the sun and moon, most obviously, had physical effects on the earth, on its temperature and fertility. The importance of the inclusion of such ancient astronomical cosmologies in myth is that it is the very same cosmological patterns that one might expect to find expressed in ritual sites, whose cosmological basis is often marked - such sites might be aligned or even shaped on heavenly bodies, something Near Eastern texts make clear (see Eliade 1971, pp.7–8). It is astronomic imagery in myth, then, that offers the student of the past the most useable key to decoding ritual sites through their shared cosmology.

This cosmological patterning of ritual sites, then, offers a correlation to the cosmological forms present in myth, so the two can be viewed as related, indeed as two sides of the same coin - hence one might be used, potentially, to illuminate aspects of the other. Such an approach has been used before, for instance in the work of Boutsikas (2007) who proposed a correlation between astronomical temple alignment in ancient Greece, the timing of specific festivals held within them and the mythology of the gods to whom such temples were dedicated. One example she gives concerns the heliacal rising of the star Spica in the constellation of Virgo, regarded in Ancient Greek cosmology as the ear of corn in the hands of the fertility goddess Demeter (2007; p.158)); as seen from the Telesterion (the temple of Demeter and Kore) at Eleusis near Athens, the first sighting of this star rising heliacally at dawn ushered in the celebration of the Great Mysteries. This event had a mythological analogue in the search for Persephone (Kore) by Demeter her mother which ended with the discovery of an ear of corn by the goddess, of which 'the heliacal rising of Virgo at the time that the search took place could have operated as a celestial symbolism.' (2007, p.162). This one example, of which Boutsikas produces many, shows that an astronomical event (the appearance of Spica, visualised as an ear of corn) had

echoes in the symbolism of both myth (the ear of corn presented to Demeter), architecture (alignment of the Telesterion to Spica), but also ritual (the presentation of an ear of corn to the initiates at the Great Mysteries) - ritual being, in essence, the dramatic re-enactment of the myth within the temple. Thus ritual, we might suggest, is the bridge between myth and site. If the site is the theatre, and the myth is the script, then the ritual is the play – and the theme of the play is cosmological. Boutsikas' general approach is one that I will be using in this thesis, using mythology to illuminate the use and patterning of ritual sites, hoping thereby to suggest the nature of the bridging device between the two - ritual.

The importance of establishing the content of a shaping myth, then, is not to be underestimated. The ear of corn in the Demeter myth mentioned above helps to identify the astronomic orientation of the Telesterion and shed light on both cult happenings and their timings. Without the myth and festivals to back up the correlation it is possible one might not correctly interpret the orientation of the temple to Spica, rather one might suggest a solar alignment, or an alignment on another star, or to nothing at all. The problems inherent in interpreting a site without a myth can be illustrated by considering the link between, say, Christianity and a church. The 'myth' behind Christianity is that of the dying and resurrecting god-man; the major ritual performed in church, however, is not a re-enactment or retelling of that death and rebirth (although the latter is celebrated yearly at Easter) but the weekly (or more frequent) Eucharist or Communion: the partaking of the bread and wine which are seen to be the flesh and blood of Christ. This rite is enacted within a sacred space that is defined by elements of the wider myth: the cross-shape of the church reflects the cross on which the sacrifice of Christ took place, with an orientation to the east, often symbolising the rising sun at spring: the crucifixion is traditionally seen as having taken place around the time of the Jewish Passover feast around the Spring Equinox, though the orientation of any particular church varies, in some cases being said to be oriented upon the sunrise on the morning of the Saint's day to whom the church is dedicated, though this 'tradition' appears little supported in fact (Hinton 2006; Allen 2016). Within the church is a font used by worshippers for an initiatory baptism, only performed once in an individual's life, and mirroring Christ's baptism in the Jordan. Elements of the Christ-myth, then, are reflected in the shaping of the site and the performance of the rites of the Eucharist and Baptism. However, if one lacked any knowledge of Christianity but had some knowledge, say, of Pagan Antiquity, one could easily put forward the argument that such a site was linked to the cult of Attis and Cybele, for example, as the two narratives are linked thematically (death on a tree followed by rebirth around the Spring Equinox); or one might equally look at churches dedicated to St John (23rd June) and St Stephen (26th December) with corresponding orientations to sunrises on those days and mistake them for solsticial orientations and conclude they belonged to a solsticial cult, or even opposing cults. One might equally argue

the font suggests an aquatic cult. By concentrating on one facet, say the presence of the font or the orientation to a certain sunrise, it is easy to generate several competing ideologies, yet even if all were amalgamated, which would be closer to the true nature of the cult, these diverse elements would still never wholly suggest what Christianity was like or what being Christian meant as an experiential phenomenon.

The point, then, is that it would be very difficult to reconstruct Christianity from the remains of a church alone, and highly possible to misinterpret the use of the building if we did not already know the Christ 'myth' from written or oral sources. Knowing the myth enables one to pick apart the meaning behind many of the architectural features of the church and ritual actions that take place within it. Therefore, finding a shaping-mythology is vitally important when looking at the British and Irish sites, for it supplies a narrative with which to work. Given the age and state of disrepair of the monuments, however, we are looking for broad-spectrum features which might not necessarily reveal the differing intricacies of the rites that may have been performed there, or the differences in the cults from, say, Continental Europe and those in Britain, let alone those from Avebury as opposed to the Ness of Brodgar. The aim, here, is to try to identify a broad shaping-mythology (but without necessarily implying the existence of a unified cult throughout the Neolithic world, or even Britain, only of a basic form of which local variants no doubt existed) and to test whether the 'software' of the reconstructed Neolithic myth is in any way 'compatible' with the 'hardware' of the sites. That seeking such a link between myth and ritual sites as we see in the Greek examples is valid in the British and Irish is provided by the vernacular Celtic literature itself, which includes narratives based at several Neolithic sites – including details that are suggestive of a preservation of oral tradition from Neolithic times (Carey 1990) (see 1.82).

Having sought to establish the Neolithic elements that survive in IE myth (whether these be P-IE or introduced latterly), and defined them as containing astronomical symbolism, it will then be necessary to suggest how such myths may have formed the background to ritual narratives performed at ceremonial sites shaped by the same cosmology, for narrative (the 'plot' of the 'myth') is just one aspect of the function of myth; another is the representation of this myth in physical form (as a ceremonial site, artefact, or as a ritual act). While the narrative might provide us with clues to the use of the site, the cosmology that frames the myth would suggest more of the establishment of its form. Ethnological studies suggest that often the construction of structures (especially, but not only, religious structures) mirrors that of the cosmos (the ridge pole of a house as representing Milky Way, the doorway facing the rising sun, for example); Accounts from anthropological literature (especially concerning Ancient Near Eastern cults which may have had a familial relationship to those that entered Europe during the Neolithic, as

we will see) show how myth and ritual are really two faces of the same process (Gaster), and how in ritual the narrative is performed within a ritual space that is shaped cosmologically.

Reconstructing the sites and views – a methodology

Turning to the archaeology, the sites studied in this thesis are the circular ritual sites of the late Neolithic (and Early Bronze Age). Having initially decided to look at the well-studied sites of Stonehenge and Avebury and the so-called super-henge sites of Wessex, I soon concluded that such a selection was both regionally limited and also did not take in to account the probability that the henge building tradition had originated in the Orkney area, thus the Wessex examples might reflect developments not original to the Orkney henges. Therefore, the study was expanded. Wainwright and Harding's popular books on henges (1989; 2003) were used to identify what were considered 'core' sites (though one of the main criteria of selection was the availability of excavation plans or clear aerial photographic and/or satellite images). A sample of 55 such sites were selected. These were made up of 48 henges (including the 'superhenges' of Wessex), 5 passage graves, plus 2 associated circular ancillary monuments.

These sites were examined for the following features:

- the placement/orientation of entrances/exits, noting possible alignments or sight-lines (from the inside or outside the monument as appropriate) on visible natural features such as hills (especially double-hills), man-made mounds, and the rising and/or setting points of heavenly bodies

- the location (and direction of flow) of nearby water-sources

- artefactual deposits suggesting ritual use

Orientations were calculated through the following process: where possible, several different plans were used for each site, as well as aerial photographs from Google Earth, which was also used to double-check ordnance datum (OD) measurements (in metres above sea-level), in order to build an accurate model. The location and size of the sites' entrances were plotted as precisely as practicable, though in the case of henges, especially, given the amount of time that has elapsed since their construction, such measurements can only be estimations – for although crop marks and excavation can provide fairly accurate estimations of ditch size, the banks that define the entrances, where they exist today, such as at Knowlton and Avebury, may have been either considerably eroded by weathering and ploughing in the interceding years, thus appearing wider than they had originally been, or, conversely, they may have collapsed and spread over that time, narrowing the original entrance width. The accuracy, of course, also depends

somewhat on the form originally taken by henge entrances; for the purposes of this study I have assumed that the original banks were similar in form to those that survive in the archaeological record today, i.e. narrowing at the highest point and thus shaped like a flat-topped bell-curve. It may have been, though, that the sides of the banks were more vertical and that the entrances mirrored the vertical sides of the walls of passage graves; equally the sides of the entrances may have been defined by posts. My decision to assume a more curved profile of henge entrances rests partly on archaeological remains, and partly on the theory put forward later in the thesis that the edges of henge banks purposefully mirrored the sloping sides of distant hills, giving a curving surface along which heavenly bodies would be seen to rise or fall. Complicating the process of reconstruction is the fact that some sites, such as King Arthur's Round Table, show signs of their entrances having been modified in later periods. All these criteria need to be born in mind when looking at the results gained from using such reconstructed entrance positions. The estimated position of the entrances defined in this study may not exactly correspond to their exact original positions, offering more an 'area of probability'. There is, then, a scope for error in my calculations, as it may have been the entrances were narrower, or wider, than I have reconstructed, but this is less important if we are looking at 'windows of visibility' rather than exact alignments viewed from a single point, as I will later go on to suggest.

To ascertain whether the orientation of monument entrances was defined by the placement of features in the surrounding landscape and/or skyscape, necessitates the creation of a virtual model of both landscape and the position of the heavenly bodies at the time of the use of the monument, as seen from the perceived centre of a monument, or from a line through the entrance looking in towards the centre (based on an assumption that the centre of a circle is its focal point). From this position a model of the surrounding landscape was created using Andrew Smith's 'Horizon' program (http://www.agksmith.net/horizon/), which creates a horizon from any given location, based on geophysical survey data (Shuttle Radar Topography Mission data, available at http://dwtkns.com/srtm), which is annotated with azimuth, altitude and declination values. Such a model has advantages where the views of the surrounding landscape have become obscured (by buildings, tree cover etc). The reconstructed horizons could then be examined for notable landscape features, like mountain peaks, that might have defined the orientation of henge entrances. The digital approach outlined above has some advantages over location visits in that in certain cases views from sites are hampered by modern features, such as the plantation of trees that now obscures much of the Snowdonia range as seen from Bryn Celli Ddu, for example, and in many cases (such as Llandegai A and B) there are no physical remains left to check of the monuments themselves, these having been destroyed by modern development. The practicality of visiting 55 sites to establish orientations/alignments in person was deemed impractical in the time frame for research, and this restriction allowed an entirely

digitally-based approach to be tested for its practicability, though where possible site visits did occur, and had occurred in the past, from which a general idea of size, feeling, and distance to traverse the site was gauged.

The digital horizon images were then loaded in to Stellarium v, 0.18.0 (https://stellarium.org/) an open source planetarium, and the skies at the time of the use of the monuments in question were reconstructed to see if the entrances were aligned on any specific and consistent astronomical targets visible above the defined horizon at that date, taking in to account changes in visibility close to the horizon due to refraction and extinction. The ability to model a virtual horizon from any location and then incorporate this into a program that can render an accurate skyscape for past epochs is something that has only been available to the researcher in recent years, with improvements in the software ongoing. While other astronomical software exists, such as Starry Night Pro 8 (https://starrynight.com/starry-night-8-professional-astronomy-telescope-control-software.html), which was used to double-check the results, Stellarium offers the ability to easily incorporate user-constructed horizons from Horizon software and has the advantage of being free to download, making it available to researchers at any level. The resulting imagery offers the most user-friendly and accurate method of reconstructing ancient skies available at the time of writing. The program includes many tools useful to the archaeoastronomer, such as the automatic plotting of important solar and lunar events in any given period; it also renders atmospheric distortion and extinction points for stars. The majority of images produced in this thesis have been made using Stellarium.

Although this thesis argues for broad patterns of alignment alongside (or in place of) the kind of pin-point accuracy many researchers consider valid (Ruggles 1999) – the data was nevertheless analysed as if exact horizon observations were being made. The idea of pin-point alignments gives a mathematical exactitude that pleases statisticians and astronomers, and work well theoretically on paper, but they do not necessarily reflect the experience of being within a monument during ritual, nor explain the use of such wide entrances where it would have been possible to build much narrower ones. A monument built by several people is unlikely to have been used to create a sight viewable by a single individual from one place within the narrowest of timeslots, as if looking down the sights of a gun. A wide entrance suggests two possibilities if alignments to heavenly bodies were instrumental in their construction: firstly , if a group of people were gathered within a henge their many differing viewpoints looking out towards a point on the horizon would necessitate a wider aperture (this is obviously not the case for passage graves, where the viewing position is limited); and secondly, the width was indicative of the need to view larger scale objects such as groups of stars, or the Milky Way. The latter possibility raises several interesting corollaries: larger windows of observation necessitate much

larger timescales, so that the view of a group of stars setting on the horizon, might be observable over the course of a couple of hours, perhaps longer, depending on the grouping. This also means that many hundreds of people in a single night might conceivably have been able to experience the phenomenon; moreover, the same phenomenon might be observable over the course of days or weeks, or even a whole season, albeit not at the same hours of the night. Such a possibility brings to mind examples like the Native American 'Ghost Dance' religion that involved dances that lasted for 5 days (Mooney 1896), the same timeframe as the Egyptian *Heb Sed* or 'Jubilee' (Frankfort 1948, p.79), while the Babylonian *Akitu*, or New Year's festival was a 12-day ceremony (that was a seasonal re-enactment of the cosmogony) celebrated in several differing temple locations around the city (Eliade 1971, p.55). Such examples change one's perspective of a monument from that of an isolated place where a putative 'astronomer-priest' or chieftain waited to observe a singular, fleeting, moment, to somewhere an entire community might be able to witness a heavenly drama, night after night, played out in the slow and stately timescale of the heavens (and better justifying the man hours involved in the monument's construction). With such a timescale in mind, the multi-faceted nature of certain sites (such as the 'super-henges'), and the variations between different sites, begins to make more sense - for mythology, by its very nature, is a process, a story, with a beginning, a middle and an end; and if that mythology was reflected in the form of the ceremonial sites and the rites performed there, we would not expect to see the same uniform, static pattern encoded in each and every monument – but multifaceted sites or groups of sites with differing *foci* that might reflect different stages, 'scenes' or 'players' within of this 'story', as seen in the *Akitu*. It is the view of the author that the idea of a moment of observation, of a sunset, say, experienced once a year, from a specialised viewpoint by a specialised viewer (perhaps inspired by the idea of the lone scientist gazing through his/her telescope) be instead replaced with the idea of a mass event, like the Mysteries of Eleusis, in which thousands took part over a number of days, from which the participants emerged transformed (Kerenyi 1967).

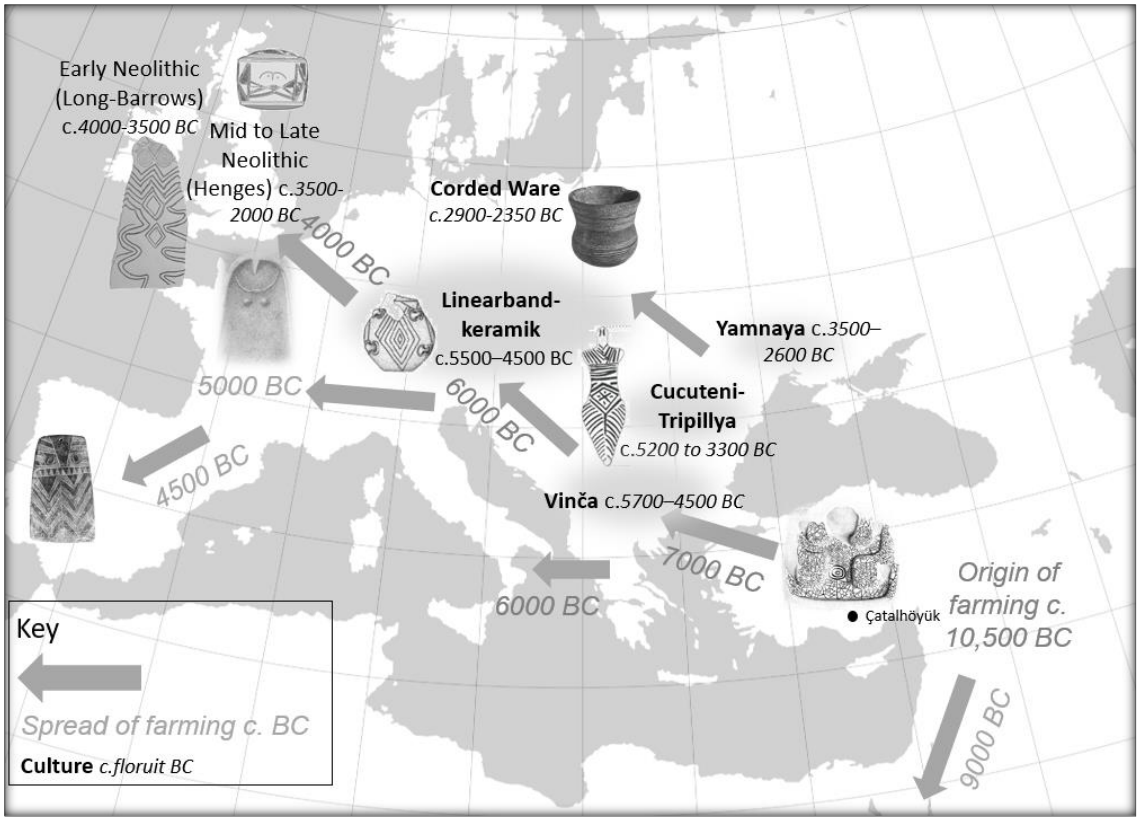


Figure 1. Map of main cultures mentioned in this thesis, with approximate dates of their floruit and the spread of farming from the Near East

Part One: Reconstructing a Mythology

Chapter One: The Cosmogony

1.1 Myths: A Window on the Past?

The premise of this study is that our knowledge of the ritual monuments of the Late Neolithic and Early Bronze Age in the British Isles remains piecemeal, largely because we lack knowledge of the belief systems that lay behind their construction. Yet myths do exist that refer to such sites, often as the *foci* of activity. Several Irish myths refer to the passage grave of Newgrange (*Brú Na Bóinne* - 'Palace on the Boyne') as the dwelling of divine figures: Bóand; her lover the Dagdae, and their son Óengus. Yet the dating of these myths to the Early Medieval period has been a hurdle to the suggestion they might reference preserved Neolithic beliefs; society had undergone massive changes (cultural, linguistic and genetic) in the three and a half millennia between the building of Newgrange and the recording of the tales.

The Celtic myths form part of the larger Indo-European (hereafter 'IE') complex of myths (Rees & Rees 1961), that accompanied the spread of IE languages from a postulated 'homeland' in the Pontic-Caspian steps *c* 3500BC, arriving in Britain during the Bronze Age (Cunliffe *et al* 2012). Yet the post-Neolithic *floruit* was not always regarded as a barrier to searching for information about earlier beliefs: Evans (1889) and Atkinson drew on IE studies to explain megalithic sites (admittedly before it was known that Stonehenge pre-dated the proposed arrival of IE culture); but even after the re-dating (Renfrew 1968) scholars argued that IE myth could still be of use in reconstructing older beliefs as elements of these pre-IE traditions had become 'assimilated' into the former during the IE expansion; Hawkes stated that Celtic myth was an amalgamation of IE 'sky cults' and a preceding 'megalithic religion', and the druids 'the nameless priests of the old megalithic religion Celticized' (Hawkes 1957, p.16); Burl similarly postulated that elements of what he interpreted as a fertility-rites in the Celtic myths originated in megalithic traditions (1979, p.206).

Such hypotheses have not been taken up by subsequent archaeologists, linguists or mythologists. While previously Kenneth Hurlstone Jackson had suggested Celtic myths offered 'a window on the Iron Age' (1964), echoing Matthew Arnold's image of the Celtic storytellers as plunderers of half-forgotten pagan traditions (1867, p.61), more recently it has been argued that the material culture and society depicted is medieval, not Iron-Age, let alone Neolithic (MacCone 1990; Mallory 2016; Hutton 1991, pp.147–9). Yet the material culture depicted need not date the myth - the Renaissance soldiers in Pierro della Francesca's 1460 'Crucifixion' (Fig 2) might lack first-century Roman uniforms, but their attire does not date the act depicted.

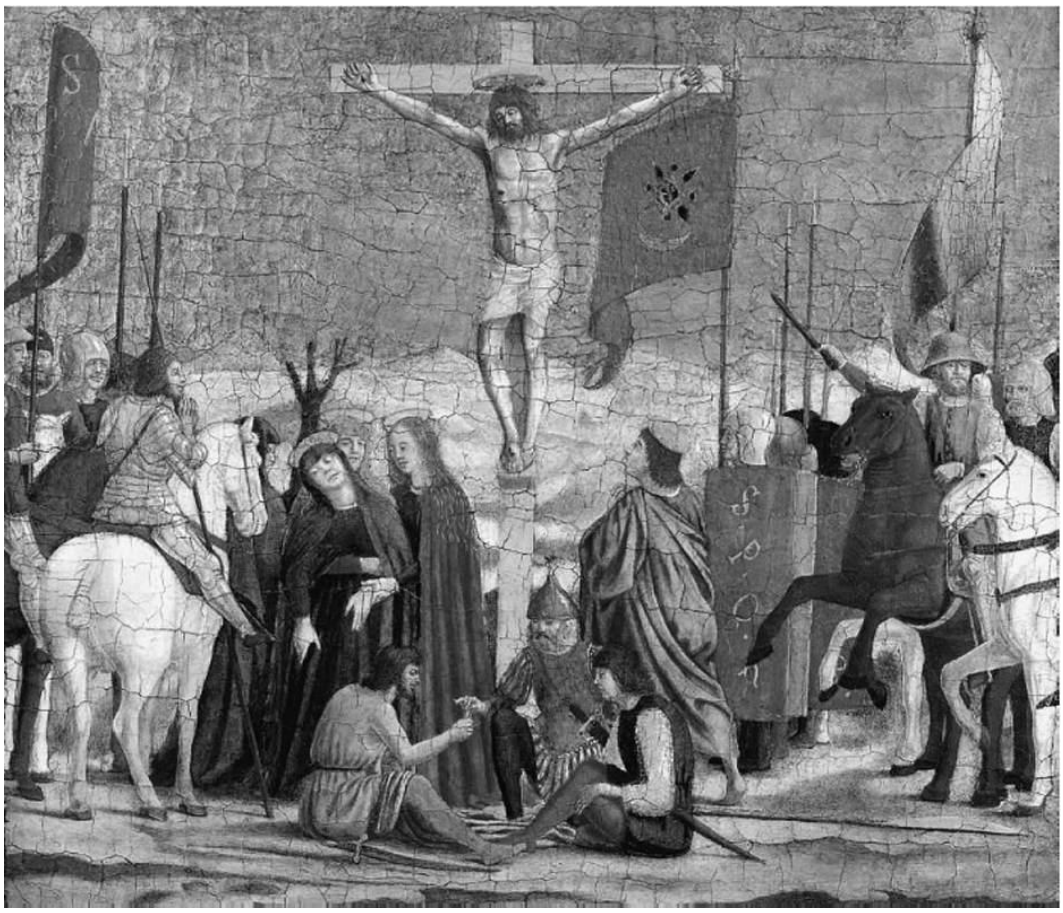


Figure 2. Pierro della Fracesca's 'Crucifixion' of 1460 depicts a Roman-era event incontemporary Renaissance 'clothing' (Frick Collection, New York)

Among the few exceptions of archaeologists using mythological material are Larsson and Kristiansen, who apply IE mythical imagery to the iconography of Bronze Age Scandinavian art (after Kaul 1998; 2004; 2005); Recent studies suggest that oral traditions can preserve motifs over vast timescales and geographical distances (Berezkin 2010; 2010a; Witzel 2012); and that the more complex a mythic motif the stronger the likelihood of its preservation (Larsson and Kristiansen 2006, p.22). Accordingly, the possibility of motifs surviving from the Neolithic ought not be dismissed out of hand. However, such dismissal partly rests on the belief that the myths are Bronze Age and that any references to the use of Neolithic sites would be, at best,

second-hand, at worst, erroneous speculation, like the medieval belief that Stonehenge had been built by giants. Yet there are scholars (Lincoln 1975; 1976) who propose that Neolithic material is present in IE myth, identifiable by its difference to core IE motifs (i.e. motifs thought to have been part of IE myth prior to their expansion). Such remnants might then be examined for evidence of a coherent belief system.

Reconstructing this core IE mythology has been made possible through the reconstructed lexicon of the Proto-Indo-Europeans (P-IE) (Mallory and Adams 2006) which includes many religious/mythological terms; arguably, the parental mythology (the proto-myths) of the P-IE peoples, like their proto-language can be reconstructed through tracing analogues found in differing extant IE mythologies back to an original proto-form (Jackson 2002; Mallory 1987; Mallory and Adams 1989).

In the following section we will examine this proto-mythology, concentrating in turn on what Lincoln has classed as the two primary myths of the P-IE culture – the cosmogony and the cattle theft (Lincoln 1975; 1976).

1.2 Twin and Man

Lincoln's reconstruction of the P-IE creation myth draws on the later IE myths of Romulus and Remus and the Hindu Yama, amongst others, to argue a derivation from an original proto-myth in which the world formed by twin brothers **Yemo* 'Twin' and **Manu* 'Man':

> We are led to reconstruct two myths: one European and one Indo-Iranian (I-I), both of which are quite similar and are closely related. In both of them, the world begins with a pair of twins, *Manu, "Man," and *Yemo, "Twin," *Yemo being characterized as the first king, while *Manu is the first priest, and in the course of the myth, *Manu offers *Yemo as the first sacrificial victim. As a result of this sacrifice, the world is created, and *Manu fashions the earth and heavens, as well as the three social classes from his brother's body. In the I-I version, an ox or bull, a male bovine, is offered along with *Yemo, and from the body of this animal all the other animal and vegetable species are created. In the European version, however, a female bovine, a cow, appears, and merely functions to feed and care for the twins prior to the act of creation. (1975, p.139)

Lincoln's reconstruction involves a single anthropomorphic entity cut up to create the cosmos. It is a popular reconstruction, given prominence in the works of Mallory (1989, p.140), Mallory and Adams (2006, p.435), and Anthony (2007, p.134) – books that have reached a wide popular audience. It is not the only reconstruction, both Güntert (1923) and Götze (1963) have put forward similar proposals (Lincoln 1975, p.122) suggesting the P-IE cosmogony was based on an analogy between the cosmos and the human form: Güntert (1923), drawing mainly on Greek texts stressed this microcosmic-macrocosmic analogy, a reconstruction preferred by West (2007, p.357), whereas Götze (1963) used Indo-Iranian texts to propose the cosmos originated

from the sacrifice and dismemberment of a primal *androgyne*. While Lincoln supports many of Güntert's arguments, he rejects the androgyne theory of Götze, proposing a more androcentric worldview. But is his reconstruction valid?

The motif of cosmogenesis from a primal anthropomorphic being (henceforth 'primal giant') is not limited to IE myth. Witzel suggests the myth is originally that of a hunting culture:

> 'The carving up of the primordial giant may represent a very old stage of …mythology going back to Stone Age hunter times. The giant would then be a reflection of the hunted or the killed animals that were carved up in a similar way, one that could be seen until recently in the northern European (Saami), North Asian, and Ainu bear sacrifice. The bones of such animals must not be cut and were preserved intact to allow their rebirth (in heaven or in this world).' (2012, p.120)

Witzel suggests that where it is found in later farming/pastoralist cultures (such as the IE examples) these are 'reminiscences of an earlier stage of culture.' (*ibid*, p.120), Lincoln, however, suggests an origin amongst planting cultures:

> One could maintain that it is a myth found throughout the world whenever societies reach a certain stage of cultural development (specifically the tuber-cultivating stage of the so-called palaeo-planters). (1975, p.124)

Eliade supports this origin, noting the formation of the world from the body of 'a marine dragon or primordial giant…seems to have developed in the culture of the earliest cultivators.' (1957, p.53).

While the motif of rebirth from dismembered remains is present in hunting mythologies (Witzel 2007; Campbell 1959, p.291) the rebirth envisaged in such hunting myths is a return of the *individual* animal or its soul (only a living animal can produce separate offspring). In contrast, the primal-giant cosmogony suggests production of *new* and *different* forms, more indicative of planting/harvesting, especially of cereals or tubers, where one 'dismembers/kills/buries' the plant to effect new growth from a seemingly 'dead' parent in an act of transformation.

In Lincoln's cosmogony the dismembered primal being becomes the 'King of the Dead' in the underworld in imagery similar to the dismembered Egyptian god Osiris who develops an underworld aspect over time, something which may have occurred in IE tradition, too (Rundle Clark 1978, pp. 97–123). The motif of dwelling in the underworld can be read as a farming-based metaphor, as in the myth of Persephone, where her rape and abduction in to Hades is analogous to the death of the vegetal world at winter. The appearance of the primal giant in IE myth, then, suggests roots in a planting culture rather than from a hunter-gatherer one.

1.3 The World Parents

A similar motif is creation through separation of the World Parents, imagined forming a primal unity, the sundering of which forms the cosmos. The primordial unity is not that of androgyny but the conjunction of opposites in a sexual embrace. The parents separate to form the material world – earth and sky, or sometimes waters above (sky) and waters below (rivers/sea) from which land then emerges (Witzel 2012, pp.128–32). They have their point of joining, and therefore cleavage, at the horizon. Here the light of a new dawn, or the rising of a heavenly body represents the moment of creation, as sky and earth 'part', while the setting of such is a regression into primal chaos. The force which separates the parents appears as a newly created entity between them, often their offspring, and is associated with the middle-ground between earth and the vault of the sky: thus he/she is associated with atmospheric phenomena, such as air or wind, and with the creation/release of the heavenly bodies such as sun and moon or planets.

The World Parents myth is not unknown in IE tradition; the Greek Gaia and Ouranos (earth and sky) are parted by their son Kronos after Ouranos, (possibly derived from the P-IE root **wel*:' to cover', 'enclose') (Dumezil 1939, p.24n3; Tucker 1931, p.253) forces his children to be consumed by, and thus imprisoned within the earth, their mother Gaia; Gaia creates a flint sickle which she gives to Kronos, with which he emasculates his father, an act that echoes the sickle cutting the seed from the growing corn.

The imagery of the division of the world parents is an anthropomorphised interpretation of cosmic phenomena: of the sun emerging from darkness, cleaving sky from ground, both daily and annually in the 'rebirth' of the sun at the end of winter. It is rendered in terms biological, astronomical and vegetal, and its clearest examples are found in Near Eastern myths, which will be compared to Lincoln's cosmogony below.

1.4 Near Eastern Cosmogonies

1.41 Sumerian and Mesopotamian Myths

The Sumerian World Parents are brother and sister Anshi and Kishar, that together form the cosmic mountain Anki resting within Nammu, the watery void; they exist in this undifferentiated state until separated by their son, the air god Enlil 'lord of the storm', who forces them apart, creating the (male) sky An and the (female) earth Ki (Hooke 1991, p.24).

A close parallel is found in the Enuma Eliš, the Mesopotamian creation epic, which tells how the goddess Tiamat (primal waters) is conjoined with her husband Apsu (Abyss), in a primal

watery chaos. Their children, the gods, grow within them, but are imprisoned in the waters, as Gaia's children are within the earth.

When skies above were not yet named

Nor earth below pronounced by name,

Apsu, the first one, their begetter

And maker, Tiamat, who bore them all,

Had mixed their waters together,

But had not formed pastures, nor discovered reed-beds;

When yet no gods were manifest,

Nor names pronounced, nor destinies decreed,

Then gods were born within them.

(Dalley 2008, p. 233)

Within Tiamat's belly the gods create a cacophony; Absu decides to kill them but is killed in the attempt by the god Ea, whereon Tiamat is slain by Ea's offspring Marduk – 'Bull-calf of Utu (the sun)'/'solar calf' (Lambert 1984), who divides her body (in two halves 'like a shell-fish') to form the sky and sea. Her tail is fixed to the Milky Way, and from her eyes flow the Tigris and Euphrates rivers.

In her belly he placed the heights of heaven,

…

He laid down her (text: his) head, heaped [a mountain up]on it,

Opened up such a spring that a torrent could be drawn off,

(Then) released through her eyes the Euphrates and Tigris,

Closed up her nostrils, reserved [the water].

He heaped up high [mounta]ins at her udder,

Drilled fountains (through the dugs) to carry off the fountain head.

He bent back her tail, bound (it) [to] the "great band," [Milky Way]

... the Apsu beneath his foot;

.....her crotch, it wedged up the heavens,

(So) [the sky] was roofed, the earth fixed.

[He ... .] ...., made the womb of Tiamat flow,

Tiamat is both earthly waters (Tigris/Euphrates) and linked to river of the sky, the Milky Way; though envisioned as a serpent or dragon (Fig 3) in later interpretations, the references to her udders suggests a bovine imagery, as does the name of Marduk - ‘solar calf’.

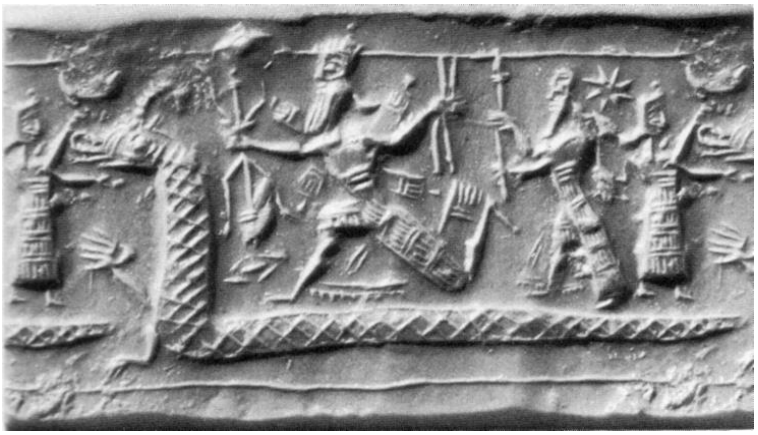


Figure 3. Neo-Assyrian cylinder-seal from the eigth century BC depicting the creative battle between Marduk and Tiamat (Source: British Museum: No ANE89589)

1.42 Egyptian Myth

In Egypt the motif appears in the Heliopolitan creation myth of the primal twins Nut (female) and Geb (male), who are separated from their sexual embrace by Shu, ‘air’, (their father) on the command of the sun god Re (Hooke 1991, p.72). Shu, an ‘air’ deity, equated with what we would call the atmosphere, is depicted as an anthropomorphic figure standing upon the horizon, with upraised arms holding the goddess Nut in place as the sky, while her brother Geb falls below becoming the earth (Anthes 1959, pp.169–212) (Fig 4).

In another version recorded by Plutarch the sun god Atum is jealous of the embrace of Nut and Geb and forbids the pregnant goddess to give birth on any day of the year – thus the gods are held unborn within her; the god Thoth helps by creating an extra 5 days outside of the calendar on which her five children Osiris, Isis, Horus the elder, Seth and Nephthys are born (Babbit 1936, p.32).

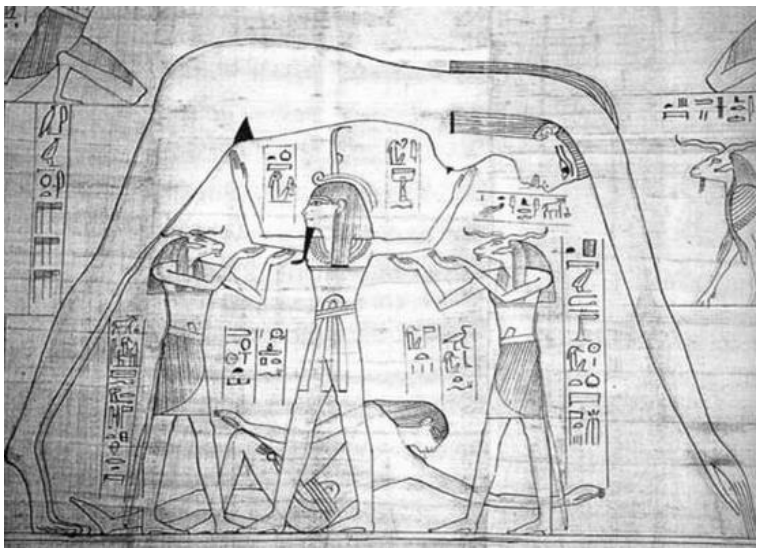


Figure 4. The Egyptian myth of the creation of earth and sky has the sky Goddess Nut separated from the earth god Geb by Shu, their father, shown here on the 22nd Dynasty Greenfield Papyrus (source: British Museum, No. EA10554,87)

Nut is associated with the night sky (Hollis 1987, 497); the Milky Way, thought of as a heavenly counterpart of the River Nile in the Pyramid Texts, is her body stretched over the sky (Wells 1992) and in the New Kingdom she is often depicted as a cow (Guilhou 2010) (Fig.5), again suggesting parallels with the boviform Tiamat.

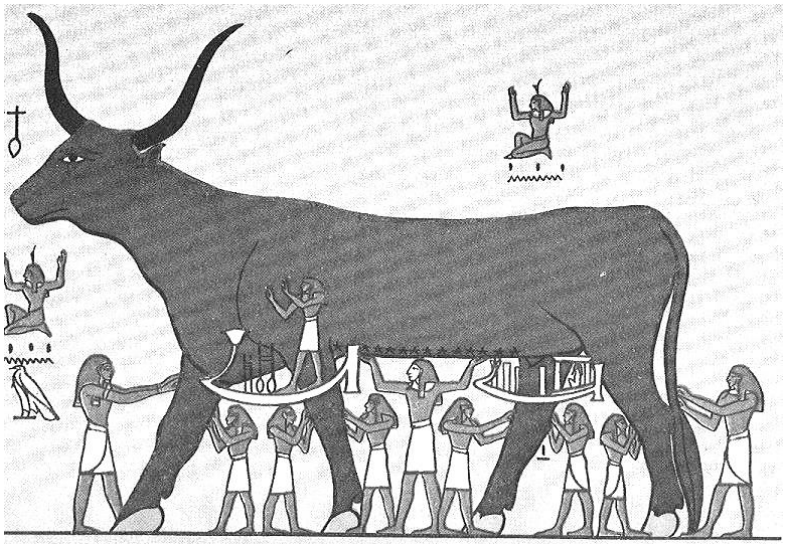


Figure 5. Nut is also depicted as a cow with stars across her belly, representing the night sky and/or Milky Way (source Wallis Budge, 1904)

Several cow-goddesses are evidenced in Egypt, who display identical iconography, including Hathor, the cow-headed mother of Horus, and Neith (Nit) - 'Water', who is the cow-shaped mother of Ra (Tyldesley 2011, p.46). A dedication to her from the temple in Sais reads: 'I am the things that are, that will be, and that have been. The fruit which I brought forth was the sun.' (Proclus, trans. Taylor 1820, p. 82). As wife of Khnum, she was a deity of the Nile, and

identified with cosmic waters of Nun. Mehet-Weret – 'Great flood/tide' (Pinch 2004, p.163) is another example; she was depicted as a cow/cow-headed goddess with a solar disk between her horns; her name suggests both the Nile and the Milky Way – the 'Celestial water', and she was a mother of Ra. Faulkner states that her name 'could refer either literally to rain or metaphorically to the milk yielded by the celestial cattle' (1978, 104). In the Coffin Texts we read:

> " I saw Re being born yesterday from the buttocks of the Celestial Cow, and if he is hale, then I will be hale — and vice versa. What does it mean, the day of being born yesterday from the buttocks of the Celestial Cow? It means the image of the Eye of Re in the morning, when he is born every day. As for the Celestial Cow, she is the Sacred Eye." (Faulkner 1978 pp.262–3)

She is the mother of the sun (Ra), while at the same time the sun is also her own eye. The connections between these Near Eastern goddesses associated with floods, (solar-) eyes and heavenly and earthly waters suggests a common derivation.

The creation of the sun (often depicted as a 'rescue'), then, is an act that occurs in tandem with the separation of the Primal Parents; the Egyptian Shu goes to Nubia to rescue the cow-goddess Hathor-Tefnut, a role shared with the hunter god Anhur (Onuris), with whom Shu is equated (Junker 1917, p.169), and who is called the 'bearer of the sky' and 'one who brings back the distant one' a reference to his rescue of a solar goddess, Me(n)hit, from Nubia. Both myths suggest the same deed – that the air god brings about the birth/rescue of the sun, an act linked to the creation of the same after the splitting of the World Parents. This will be an important theme in this thesis, especially as Anhur/Onuris is associated with the slaying of the chaos dragon Apophis (Török 2002, p.151).

The parting of the World Parents is a solidly evidenced motif in Near Eastern myth, with the female protagonist associated with cows and water, and linked with the birth/rescue of the sun. These differ from Lincoln's reconstructed P-IE cosmogony where **Yemo's* body alone, dismembered by his brother **Manu*, is responsible for creating the cosmos, though a minor role is played by an accompanying ox. The female element is lacking, presenting a very different myth from the Near Eastern ones discussed above.

1.5 Evaluating Lincoln's sources: The Western versions

Lincoln's reconstruction draws on several sources:

> Germanic (Scandinavian), Greek, Roman, Russian, Indian and Iranian texts, namely the Prose Edda, Vafthrudnismál, Grimnismál, Völuspa, and Völuspa en skamma (Scandinavian), Orphic hymn to Zeus and Plato's Timaeus (Greek), the 'Poem of the Dove King' (Russia), Livy's account of Romulus and Remus (Roman), Puruṣa-hymn of the Ṛg

> Veda (ṚV 10.90) (Indian), and Gayōmart account of the Greater Bundahišn, and the story of Yima from Yašt 19 (Iranian). (1975, p.123).

These sources and their relation to each other appear in the following diagram (Fig 6).

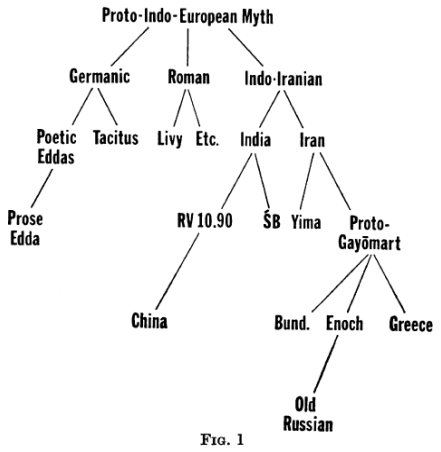


Figure 6. Lincoln's sources for his reconstructed cosmogony (source: Lincoln, 1975)

Below (Fig 7) are the same sources plotted on a dendrograph of IE mythological sources (see Appendix 1 for details of the dendrograph). On first analysis, the myth appears widespread and is arguably derived from a P-IE original as analogues are found on both eastern and western branches (note Lincoln does not involve himself in looking for possible Near Eastern parallels, or their position relevant to this schema). Lincoln argues this myth originated amongst a pastoral culture and is best reflected in I-I versions:

> Basically, two theses have been advanced to account for the difference in orientation between the European tribes and the Indo- Iranians. One holds that the Indo-Iranians were among the first groups to leave the IE homeland, migrating before the time at which the remaining groups encountered agriculture. The second, which necessitates locating the homeland in South Russia or on the Russian steppes, holds that agriculture was introduced to the [Indo] Europeans upon their entry into Europe, either by peoples already dwelling there who were agricultural or as a result of the new demands of the European environment, which gave much less scope for pastoral wanderings. It is not the purpose of this paper to adjudicate between these two views, but it should be noted that in either case the Indo-Iranian culture and economy are taken to be closer to the earliest level of P-IE than are the European. Both P-IE and I-I are pastoral, while the agriculture of the Europeans is a more recent innovation. In light of this, I am inclined to take the Indo-Iranian version of the creation myth as closer to the original Indo-European version. The myth is, then, a pastoralist's myth. In the first sacrifice, a man and an ox (or bull) were sacrificed. This couple, man-and-animal, or better yet, Primordial-Man-and-Primordial-Animal, forms a complete unit of society, from which the physical world and the societal world were created, the latter being composed of men in their three characteristic classes and all the species of domesticated animals. As the primordial beings were dismembered, society came into being: from the man, men; from the ox, animals. Thus, the total social world originated in the first sacrifice. In each successive sacrifice, the pattern stated in the myth is repeated, man-and-animal being offered up to produce furtherance of men-and-animals. It is not simply a gift-exchange, though that element is present, but on a grander scale it is the offering of the minimal societal unit for the benefit of society at large (1975, pp.143–4)

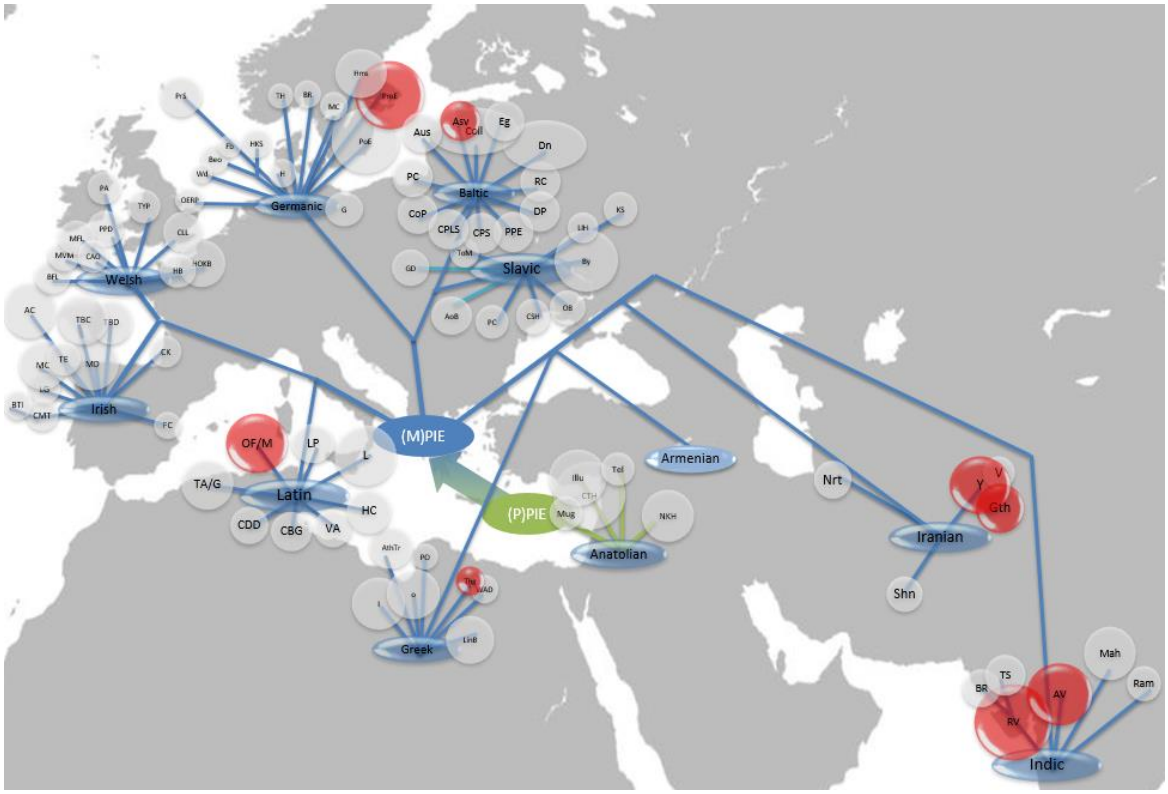


Figure 7. Dendograph showing spread of Lincoln's posited Proto-Indo-European cosmogony. The red circles represent attested versions of the motifs under discussion in each language group (see Appendix 1) (source: author)

Lincoln's primal source of a *Yemo figure in these myths come from two Germanic versions: the dismemberment of the giant Ymir in the Eddas and the 'earth-born god' Tuisto ('entwined/twisted') mentioned in Tacitus's Germania. However, though Ymir means twin, he is accompanied not by a male twin (*Manu) but a female cow named Auđumbla – who emerges from the ice and produces four rivers of milk from her udders, from which Ymir drinks. Ymir is dismembered by the grandsons of Auđumbla: Odin, Vili and Ve - of *Manu there is no trace, instead the cow and the man form a pair, Auđumbla playing the Gaia role, her offspring killing Ymir as Gaia's offspring kill Ouranos.

Lincoln states that 'In the European version… a female bovine, a cow, appears, and merely functions to feed and care for the twins prior to the act of creation' (*ibid*, p.139). But this is disingenuous; the cow not only feeds Ymir, she is both the origin of four rivers (of milk) and the progenitor of the gods. Other IE myth suggest a union between the god and the cow, such as Zeus and Europa/Io, or Pasiphae and the Bull of Poseidon in Greek tradition; an original hierogamy between the Auđumbla and Ymir is possible, such as is depicted on Bronze Age stone carving from Hoghem (Fig 8) (Glob 1983, p.56).

Figure 8. Man, and cow mating, from Hoghem in Bohuslän, Sweden

Doniger O'Flaherty mentions that in Snorri's Edda the myth of Auđumbla and Ymir contains hints of brother/sister incest (1980, p.243). This might have been reason for an original hierogamy to be censored when the myth was recorded in later (Christian) times, and we will see this is certainly the case in one prime example in the Ṛgveda (see discussion of Yamī in 1.6, below).

The Ymir myth, then, does not recount the murder of a twin by his twin brother, but a murder by divine offspring produced from a female bovine associated with the origin of waters. It appears closer to the Near Eastern cosmogonies than Lincoln's reconstruction suggests.

Likewise, in the Germania evidence for the twin brother *Manu is lacking; Mannus appears as the offspring, not brother, of Tuisto – 'twisted/entwined one' (whose name seems suggestive of an original androgyne).

Moving on to Romulus and Remus, both Lincoln and Puhvel argue the name Remus stems from *Yemus' – 'twin', changed to alliterate with 'Romulus'- 'man of Rome', the founder of the city. Early sources, however, suggest the city derived its name from 'Roma/Ruma', either a goddess, or the daughter of Aeneas of Troy. The fig-tree under which the twins were discovered, Ruminalis, was named after this goddess:

> because cud-chewing, or ruminating, animals spent the noon-tide there for the sake of the shade, or best of all, from the suckling of the babes there; for the ancient Romans called the teat "ruma," and a certain goddess, who is thought to preside over the rearing of young children, is still called Rumilia, in sacrificing to whom no wine is used, and libations of milk are poured over her victims. (Plutarch life of Romulus, 4.1; trans. Perrin 1914)

Offerings, then, were said to be given to Rumina/Rumilia in the form of milk being poured into the Tiber, on whose banks the fig-tree lay. The fig tree has links to the Egyptian cow-goddess Hathor, who is depicted as offering a drink of immortality from the branches of a sycamore (Fig

9) – hence an epithet given to her of ‘Lady of the Sycamore’ (Norvell 2008); it produces a milky latex that can be used in cheesemaking in place of animal rennet.

Figure 9. Egyptian goddess Hathor of the Sycamore tree, Nineteenth-dynasty, tomb of f Senned at Deir-el-Medina

Rumina was originally a goddess of the river Tiber (‘Ruma’ in Etruscan) and it is after her that the city is named. Wiseman suggests the twin-brother image is a late fabrication originating in 367 BC and linked to the foundation of the institution of dual consulship (1995, p. 92). Such would be possible if the original myth already concerned twins; Remus and Rumina, that is, *Yemo and river goddess, whose connection to milk and ruminants recall Auđumbla and the many Near Eastern variants discussed above.

Such cow imagery, Lincoln suggests, is a secondary element introduced on encountering European agricultural tribes, a residue, then, of non-IE myth. However, the examples given above do not suggest Neolithic imagery being shoe-horned into a Bronze-Age cosmology, rather the obfuscating of the former by the latter, so that the role of the cow-goddess is being hidden or changed, not incorporated – Romulus, for example, obscures Rumina, indeed is Rumina transformed. This is contrary to the position in Egypt where the role of the cow-goddess became better defined and elaborated over time. Quite why this should be so lies beyond the remit of this study, but it may lie in the differences between the relative stability of the Egyptian state in comparson to the disparate, partially nomadic IE culture, or, and this may not be unconnected to the former statement, the association between the goddesses and specific rivers, land or skyscapes from which a dispersing population could become exiled, not an issue for a civilisation tied to one river as in Egypt.

1.6 Evaluating Lincoln's sources: Indo-Iranian variants

As the western examples offer little support for a cosmogony as suggested by Lincoln, we are left with contemplating I-I examples – the Hindu myths of Puruṣa, Yama and the Iranian myth of Gayōmart. These can be dealt with succinctly:

- Puruṣa, the 'cosmic man' of the Ṛgveda, (hymn 10.9) is a primal giant, but he creates the universe from out of himself (like the Egyptian Amun) without a twin brother; where a co-creator is recorded it is Viraj, the female principal often depicted as a *cow*, or with Prakti, a female creative force who in the Purushas takes the dominant role.

- Yama, 'twin', appears in the Ṛgveda as being killed by Manu – yet Manu is his half-brother, not twin. Furthermore, Manu is elsewhere recorded as slaying his wife, Manavi (whom Lincoln suggests is his (twin) sister) in the form of a bull (Satapatha Brahmana [SB] 1.1.4.14-17). Yet the name Yama 'twin' suggests he has a sibling. This is not Manu (no IE myth suggests it is) but a goddess named Yamī ('twin'), as the Ṛgveda makes clear (hymn 10.10. 1-14). Yamī ('twin') wishes to couple with Yama incestuously (like Manu/Manavi), yet Yama rejects her in what can be read as a late and prudish reaction to an original cosmogonic symbolism, much as we postulated for Ymir and Auđumbla. Yamī is associated with milk and cows and the Yamuna river, a tributary of the Ganges, in to which milk is offered ritually, recalling Rumina.

- Turning to Lincoln's Iranian sources, the Zoroastrian myth of Gayōmart tells of the dismembering of an ox, after which Gayōmart perishes. From Gayōmart come plants and the metals of the earth – he is the creator of earthly substance while the ox is associated with the heavens: animals arise from his semen after it has been carried up to the sky. However, the name of the ox, Gavaevodata, contains the element 'gav' - 'female cow', and the word translated as 'semen' also means milk (Boyce 1975, pp. 138–139). It seems probable the ox was originally a cow whose sex was changed when it later became a sin to kill a cow in the time of Zoroaster; and that the original involved the dismemberment of a cow and the sending of its milk to the sky ('pesh Parwez' - 'in front of the Pleiades') as the Milky Way; an *earlier* version of this myth recorded in the Yasna sees Yīma (twin) dismember a cow; And yet the Gayōmart myth Lincoln believes is 'closest to P-IE culture', even though it is a) influenced by Zoroastrianism, and b) contains traces of an originally female bovine, and c) contains no equivalent of his proposed *Manu.

Looking at Lincoln's examples we see male/female dualism and cattle symbolism within them all. The western variants, he argues, acquired cow symbolism on encountering farming

populations in Europe, yet they are irrefutably present in the earlier stages of the eastern IE variants, too. This does not fit his argument that the eastern (pastoral) branches were primary. The presence of cow symbolism in the myths, then, cannot be explained as due to later influence from Neolithic populations met when spreading westwards. Consequently, the suggestion that the I-I pastoral version is the proto-form of the myth is not evidenced, rather it is a late modification. By extension, the twin as female/cow motif better deserves the title of proto-myth, appearing in all branches. It seems necessary to give up the reconstruction involving twin brothers, for as Wiseman states, it is based on:

> '(1) the Norse Ymir, who has no brother; (2) the Germanic Tuisto, who is the *father* of 'Man'; (3) the Vedic Yama, whose twin sister has been replaced by his half-brother, and who himself has to replace the half-brother's wife as the sacrificial victim; and (4) the Iranian Yima, who has no brother, and whose story must be fundamentally reinterpreted to make it fit.' (1995, p.21)

This analysis leaves us in a predicament, for instead of defining a Bronze Age proto-myth which we can remove to leave Neolithic remnants, the posited Bronze Age myth itself suggests a derivation from Neolithic material; the hitherto postulated *later* accretions belong to an *earlier* stratum.

1.7 Restoring the female element

Such a misreading of the myths stems from the assumption that I-I myths represent P-IE cultural norms; Lincoln states he gives them primacy because they are the closest, culturally, to the pastoralist worldview typical of P-IE culture, yet their obscuring of earlier female symbolism makes them *unrepresentative* of an original schema, and to utilise them to reconstruct a proto-mythology is problematic. Doniger O'Flaherty emphasises this point, saying:

> In studies of Indian mythology, the Ṛgveda is usually taken as the beginning; but it would be misleading here to begin with the Vedas, for by the time they were being composed (c.1200 BC) *a major power shift had already taken place.* In the earlier, Indo-European period, there appeared in myth and ritual an important goddess… She survives in the Ṛgveda in the figures of Urvaśi, Saraṇyū, and Yamī, each appearing in a single obscure hymn.' (1980, p.79 *my italics*)

Puhvel is dismissive of an original female presence, stating that 'It seems this Indo-Iranian male-female myth is of a trite and transitory anthropogonic kind, with the female a mere folkloristic foil to her brother.' (1989, p.64) Near Eastern myths display similar male-female pairings without the female element being regarded as a mere foil, so why should Indo-Iranian myth be interpreted differently? Puhvel's analysis seems prejudiced and based on a wish to do away with the problematic presence of the female in what ought to be a pastoralist, warrior mythos. West, at least, after Guntert, admits a female element was present in the original

cosmogony, though he is inclined to see it as part of an original androgynous twin. He suggests that:

> 'Originally the bisexual being… was divided in two, a male half and a female half… the prototype of this separation of the sexes could be seen in the separation of Father Sky and Mother Earth.' (*ibid*, p.358)

Lincoln's belief that the I-I version is closest to the P-IE original, *on the premise the P-IE were pastoral nomadic peoples, not farmers* colours the way he reads the myth. Having decided the twins are both male, and accompanied by a male bovine, Lincoln needs to find another twin to fit the shoes of the absent goddess, in his case *Manu, who, like the ugly sister to Cinderella, is unable fit her shoes at all. Likewise, the ox, given Near Eastern analogues, is a substitute to an aspect of the twin goddess, something to be born in mind as we turn to Irish myth, especially those concerning the Bóand mentioned at the start of this chapter as associated with the Boyne valley 'necropolis'. Lincoln eschews this Irish myth as a possible analogue in his search for a P-IE cosmogony, yet it is clearly cosmogonic in origin and ought to be taken in to consideration in any study of IE myth. Accordingly, it is where we now turn.

1.8 Bóand

Bóand's story is reconstructed from the (three extant) versions of *Tochmarc Étaíne*, 'the wooing of Etain' and two poems and a prose summary of them from the Metrical Dindshenchas and the Rennes Prose Dindshenchas respectively.

Bóand, 'white cow', also known as Eithne, numbers among the Irish gods, the Tuatha Dé Danann. She is described in the *Lebor Gabála Érenn* as the daughter of Delbaeth ('he who shapes, or forms') (Macleod 2013) and wife of Nechtan son of Namat; but she is recorded as a wife of Elcmar in *Tochmarc Étaíne*, while in the metrical Dindshenchas she is also said to be wife of Nuada or Nechtan (the Rennes Dindshenchas calls Nechtan 'Nuada's son' (Stokes 1894, p.293)). Nechtan's name is a correlate of Neptune, suggesting an origin as a primal water deity along the lines of Apsu, Tiamat's husband; and Bóand, like Tiamat; is both mother of gods and the source of all waters.

1.81 The Solsticial birth of Óengus

Óengus ('one-strength') is her son by the Dagdae, conceived during an adulterous liaison aided by the magic that sees the sun appears to stand still in the sky. According to the *Tochmarc Étaíne*:

> Elcmar of the Brug [Brú na Bóinne, that is, Newgrange] had a wife whose name was Eithne [Bóand], the Dagdae worked great spells upon Elcmar as he set out, that he might not return betimes (that is, early) and he dispelled' the darkness of night for him, and he kept hunger and thirst from him. He sent him on long errands, so that nine months went by as one day,

> for he had said that he would return home again between day and night. Meanwhile the Dagdae went in unto Elcmar's wife, and she bore him a son, even Aengus, and the woman was whole of her sickness when Elcmar returned, and he perceived not her offence, that is, that she had lain with the Dagdae. (trans. Bergin and Best 1934, p.143).

The spell performed by the Dagdae is astronomical:

> He brought her to the birth in a single day.
>
> It was then they made the sun stand still
>
> to the end of nine months — strange the tale —
>
> warming the noble fine grass
>
> in the roof of the perfect firmament. (poem 3 Bóand II) (Stokes 1894)

The magical stilling of the sun which a creative act occurs suggests the solstice, literally 'sun-standing-still', when the sun no longer moves along the horizon (that is, it is seen to visibly rise and set at the same location on the horizon for a few days around the solstice). This gestation outside of time echoes the 5 epagomenal days of the Egyptian creation myth in which Nut gives birth. Óengus, conceived and born on this day, is a solar analogue.

Seconding the solsticial interpretation is a myth recorded in the metrical Dindshenchas concerning the neighbouring passage grave of Dowth:

> A king held sway over Erin, Bressal *bó-dibad* ['extinction of cows'] by name. In his time a murrain came upon the kine of Erin, until there was left in it but seven cows and a bull. All the men of Erin were gathered from every quarter to Bressal, to build them a tower after the likeness of the Tower of Nimrod, that they might go by it to Heaven.
>
> His sister came to him and told him that she would stay the sun's course in the vault of heaven, so that they might have an endless day to accomplish their task. The maiden went apart to work her magic. Bressal followed her and had union with her: so that place is called Ferta Cuile from the incest that was committed there. Night came upon them then, for the maiden's magic was spoilt.
>
> 'Let us go hence,' say the men of Erin, 'for we only pledged ourselves to spend one day a-making this hill, and since darkness has fallen upon our work, and night has come on and the day is gone, let each depart to his place.' 'Dubad (darkness) shall be the name of this place for ever', said the maiden. So hence are Dubad [Dowth] and Cnoc Dubada named. (The Metrical Dindshenchas, 78, trans. Stokes 1894)

Here the stopping of the sun accompanies an incestuous union, in the manner of Nut and her brother Geb, which is the creative act. This myth, located at a Neolithic ceremonial site, provides a 'time' for its actions – the solstice – that fits an element of the site mentioned, as the chamber of one of the satellite tombs at Dowth (Dowth south) is aligned on the winter solstice sunset (Ruggles 1999, p.129).

1.82 Womb of the White Cow

If Dowth ‘darkness’ is the place of solsticial sunset, Newgrange might correspond to the place where the light is born at sunrise. Its name Brú na Bóinne can be translated as ‘Womb of Bóand’ which suggests the passage grave embodied the belly of the cow-goddess from whom Óengus is born (expressed in the sun’s rays appearing in the chamber on the morning of the winter solstice?). This association between solar birth and a monument to the dead is consistent with Egyptian tradition where Mehet-Weret was associated with both the birth of the sun and with the afterlife journey (Tyldesley 2011, 41). The Book of the Dead spell 186 reads:

> Spell 186: Hathor, Lady of the West; She of the West; Lady of the Sacred Land; Eye of Re which is on his forehead; kindly of countenance in the Bark of a Million Years; a resting-place for him who has done right within the boat of the blessed; who built the Great Bark of Osiris in order to cross the water of truth.’(Papyrus of Ani) (Faulkner 2015, Plate 37-A)

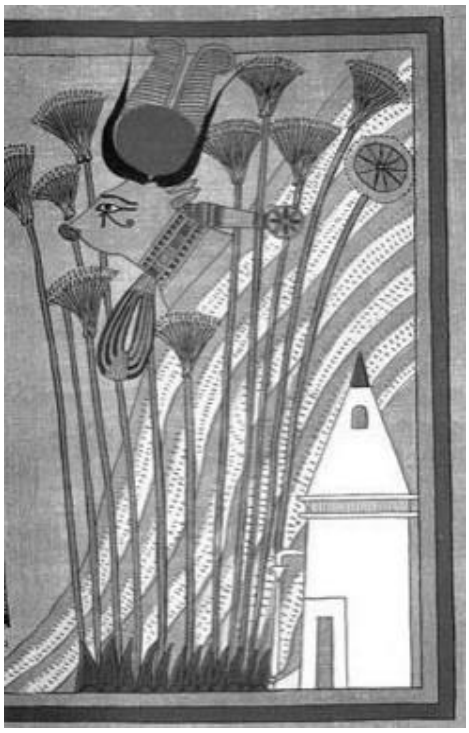


Figure 10. The cow-goddess emerging from the funerary mountain, from the Papyrus of Ani, Spell 186, New Kingdom (Source: British Museum No. EA10470,37)

The accompanying image to this spell (Fig 10) shows her looking out of the hills above a tomb, from what is called the ‘funerary mountain’; the tomb, moreover, signifies the body of the cow-goddess – which the souls of the deceased enter to be reborn in the Milky Way. As receiver of bodies at death, and restorer of them (Piankoff 1934, pp.57–61), the womb of the cow-goddess is the place of celestial transformation and rebirth; similar imagery may once have existed in the Bóand mythos.

Óengus' magical solsticial birth suggests knowledge (or memory of) the alignment of the passage of Newgrange on the sunrise on the five days around the winter solstice. Are we to argue, then, that the myth was applied to the site long after its building, possibly by a culture ignorant of the use of the site, or that it preserves genuine Neolithic traditions? In his book on his excavations at Newgrange Professor Michael J. O'Kelly argues that a re-investigation of the myths surrounding Newgrange and its associated monuments in the Boyne valley is timely; he writes:

> 'As a general rule…the most that scholars will allow in regard to the ancient Irish myths and traditions is that they may go back in oral form to the centuries immediately preceding the introduction of Christianity in or about the fifth century …Radiocarbon dating has shown Newgrange to be a thousand years older than the date popularly assigned it in pre-excavation days…Perhaps a similar lengthening is overdue in respect of Irish mythology and heroic saga… If this were the case it would …bring it nearer in time to the people who built the Boyne tombs. Can it have been they who planted the first seeds of Irish oral literature and should one begin to think of this not as a window on the Iron Age but as one on the Late Neolithic?' (1982, p.48)

Carey supports such a hypothesis, stating that knowledge of the solstice alignment preserved in myth is itself evidence of preservation:

> Recalibrated radiocarbon dating places the construction of the Newgrange passage tomb at between 3320 and 2910BC. It appears to have been sealed shortly after it was finished, and contains no materials from the Beaker settlement which occupied the site some centuries later; in fact it seems likely that the entrance had by then already been concealed by the collapse of the outer surface of the cairn, rendering any further direct observations of the solar alignment impossible…In my own opinion the specific localization of the legends, taken together with the apparent uniqueness of the design of Newgrange, cannot reasonably be dismissed as mere coincidence.
>
> … Oral societies do not preserve ideas and information out of simple antiquarianism: knowledge of the past survives only because of its relevance to the present and is constantly vulnerable to modification as the context of this relevance changes over time. In the case of Newgrange, we must therefore suppose not only that there was some cultural link between its builders and the first speakers of Goidelic in Ireland, but that this link exercised a formative influence on the belief system of the latter. Again, the survival of some version of these ancient doctrines in the medieval literature indicates that the world-view of the Irish remained, at least in certain respects, astonishingly stable throughout the intervening centuries: the Boyne legends were still relevant, and important, in the Christian period. (1990, pp.28–29)

Of course, one major continuing factor from the Neolithic to early Christian times was the cultural importance of the cow; the importance of this animal alone might suggest a motivation for such material to have survived.

To re-iterate - the solsticial birth of Óengus ('one-strength') suggests the appearance of the sun within the chambers of Newgrange, the 'womb of the white cow,' at midwinter. The loss of this alignment archaeologically at the end of the Neolithic due to the collapse of the cairn (O'Kelly 1982, pp.68–75) suggests its presence in myth is unlikely to be a later interpolation, as it has

only again become visible in recent times due to the reconstruction of the chamber in the 1960s (*ibid* p.111).

Óengus is a kind of Horus, who will later claim the Brú from his father (or from Elcmar, depending on the version) just as Horus takes over the position of his father Osiris, only to lose it in turn to a god named Midir. These gods who possess the Brú do so by becoming wed to figures of sovereignty with clear solar attributes – Caer Ibormeith and Etain Echraide, but analysis of these myths is beyond the scope of the present thesis. This is a cosmogonic myth that shares many aspects with the Near Eastern cosmogonies discussed earlier, rather than with Lincoln's proposed *Yemo myth.

1.83 Bóand as River: the release of cosmic waters

Further Near Eastern analogues appear when we examine Bóand as the source of waters. After the birth of Óengus, Bóand goes to the well of Segais, a magical well, either to wash away her guilt or through curiosity of the contents of this well which is owned by her husband Nechtan.

> Bóand wife of Nechtán son of Labraid went to the secret well which was in the green of Síd Nechtaín. Whoever went to it would not come from it without his two eyes bursting, unless it were Nechtán himself and his three cupbearers...
>
> Once upon a time Bóand went through pride to test the well's power and declared that it had no secret force which could shatter her form, and thrice she walked withershins round the well. (Whereupon) three waves from the well break over her and deprive her of a thigh and one of her hands and one of her eyes. Then she, fleeing her shame, turns seaward, with the water behind her as far as Boyne-mouth, [where she was drowned]. (Stokes 1894)

Bóand's curiosity which brings about her doom suggests later Biblical influence. She disobeys an Edenic prohibition (like Eve's prohibition against eating the fruit of the Tree of Knowledge), and so brings about her downfall.

The dismemberment of Tiamat described in *Enuma Eliš* forms both earthly and heavenly rivers (i.e. the Milky Way). In the Irish sources Bóand becomes both the river Boyne, which appears as Βουουινδα (Bououinda) – (Old Celtic *Bovinda – 'White Cow') in Ptolemy's Geographica, of identical etymology the eponymous cow-goddess. Lebor Gabála Érenn calls the river 'Female-formed' indicating the river is seen in anthropomorphic terms. We find this river/goddess analogy throughout the Celtic-speaking world (and beyond) (Green 1989, pp.161–2) and there is ample evidence to support it (especially Romano-Celtic inscriptions) to not necessitate repeating it here, suffice to say that she conforms to the pattern of goddesses such as Nantosuelta (river-valley of the sun) the mate of Sucellos, an equivalent of Dagdae.

There is a suggestion that these waters are circular, for they originate at Sid Nechtaín, flow to paradise then flow 'back again hither to the streams of this Sid' in a manner not unlike the

Greek Okeanos, the encircling world-ocean, as the Metrical Dindshenchas record. Bóand is not just the Boyne but all rivers (including the Jordan, Tigris and Euphrates and the river leading to 'the Paradise of Adam', and back), signifying a wider cosmogonical theme.

The Dindshenchas treat her death as a cosmogonic dismemberment like that of Tiamat: sections of the river bears names of body parts, such as the 'Arm of Nuada's Wife and her leg'. Likewise, in the Egyptian book of the Dead the soul of the dead pharaoh ascends to the Dwat (the starry otherworld located in the sky) via the Milky Way, which some argue is the body of Nut (Wells 1992; Maravelia 2003) though others argue Nut is the ecliptic (Neugebauer and Parker 1960, 69). As the pharaoh ascends, Spell 136A of the Book of the Dead tells us:

> 'he repels the waves which are over yonder polar region of Nut…' (Faulkner 2015 p. 132)

An alternate (if dated) translation by Wallis-Budge states that the figure in the sun-boat:

> 'turneth back the water-flood which is over the thigh of the goddess Nut by the staircase of the God Sebaku (Geb) (Book of the Dead, Spell 136a; *trans* Wallis Budge 1895, p.409)

Suggestive of the flooding of the Well of Segais that deprives Bóand of a leg. The differences in translation, according to John Taylor:

> *'*arises from the interpretation of the word *w'rt*. Among the different meanings which this word can have are 'leg' (or 'thigh') and 'region' or 'district'. In full writings of the word, determinatives should be present which would enable the correct interpretation to be established, but in the Book of the Dead these determinatives may be omitted.' (*personal communication*, January 2019)

Quirke (2013, p.301) renders the line as 'driving back the sky storm-water of that sector of Nut at this terrace of Sebeg'. Yet, given the lack of a determinative, the translation of *w'rt* as leg/thigh cannot be dismissed out of hand. If this is the case then the correspondence between the two mythologies, Egyptian and Irish, is striking. The 'leg/thigh' of Nut appears elsewhere in Egyptian writings and is thought to be a reference to a constellation in the northern sky, amongst the (circumpolar) constellations that never set. Some regard it as Ursa Major, or Cassiopeia (Renouf 1874), the latter perhaps supported by Chapter xcviii of the Pyramid texts that state the leg/thigh is 'in the Stream' i.e. the Milky Way:

> 'Oh thou Leg in the Northern Sky, and in that most con- spicuous but inaccessible Stream; I rise up and come to light as a god, I am conspicuous but inaccessible. I rise up and live, and bring myself to light as a god.' (*trans* Renouf 1904, p.165)

Renouf states in the notes to this translation that 'The Stream which is so conspicuous but cannot be reached is the Milky Way, and the Leg is the constellation Cassiopeia in the Northern Sky.' (*ibid*, p.166). In Book of the Dead where we also read of the:

> ‘That leg of Isis, which Ra cut off with the knife in order to bring blood to the Night-bark’ (Faulkner 2015, p.125)

This occurs in chapter 99 which talks of the celestial boat’s sky journey, occupied by He who wards off the Apophis (*Apep*) serpent (*ibid*, p.125) and He who ‘had brought back the Great Goddess after she had been far away’ (*ibid*, p.125), a reference to the rescue of the solar eye that is the cow-goddess. Interestingly, the Irish name for the galaxy is ‘Bothar BoFinne’ – ‘the path of the Bóand /white cow’. Although the latter is derived from later folk-tradition, Near Eastern analogues suggest that Bóand’s imagery is stellar as much as terrestrial.

It is prudent at this juncture to summarise aspects of the Egyptian cow-goddesses in relation to Bóand:

- In Egypt we see many cattle goddesses (Neit ‘cosmic waters’, Nut ‘sky’, Hathor ‘House of Horus’, and Mehet-Weret ‘Great Flood’), who are both the Nile and the Milky Way (known as the ‘Winding Waterway’ – a celestial aspect of the earthly river)

- In Ireland Bóand ‘white cow’ is responsible for causing a flood which forms the river Boyne; the Milky Way is named after her

- In Egypt part of it the Milky Way is known as the *lake of the thigh*, or *Nut’s thigh*, hinting at a cosmic dismemberment

- In Ireland a section of the river Boyne is named after ‘the wife of Nuada’s [i.e. Bóand’s] leg’

- In Egypt the Milky Way as cow-goddess is the birthplace of the Sun (and the Moon) – the Sun being both the God Re and the cow-goddess

- In Ireland the ‘womb of the white cow’ is the birthplace of the god Óengus at the solstice within Newgrange; the release of the waters in Bóand’s myth is related to the loss of her own eye, which in Irish is ‘*Suil*’ derived from **Sawol*, P-IE for ‘Sun’

- In Egypt the rising of the Nile was heralded by the heliacal rising of Sirius, which rose beside the Milky Way, after 70 days absence around the time of the summer solstice.

- In Ireland the flooding of the Boyne was a winter event – yet the passage at Newgrange aligns on the rising of Sirius, which shares the same declination as

the midwinter sun c. 3200-2900 BC. Whether this was coincidental or whether it played a symbolically important part in the myths and rites of Newgrange will be examined in part two.

- In Egypt the earth-god Geb is depicted in goose form (the 'great cackler') that Nut is depicted holding on her body; this is interpreted as the constellation of Cygnus lying within the Milky Way.

- The Irish Óengus falls in love with Caer Ibormeith ('yew berry' – a solar image?) whose abode in the 'Lake of the Dragon's Mouth' suggests a celestial location; they both transform in to swans and fly from Newgrange.

Considering such parallels, the similarities of the Newgrange myths to Near Eastern examples suggest the Neolithic Irish cosmogony may have been derived from the latter or a shared root.

1.9 A Neolithic core?

This analysis shows that far from differing from the myths of the Near East, the earliest IE myths show the presence of a cosmogony on a Near Eastern pattern. This could be explained in one of two ways – firstly, that P-IE culture was originally pastoral and androcentric (of which now no original myth can be reconstructed) but it very quickly took on farming (mainly cattle) symbolism that paralleled Near Eastern forms (arguably, some cattle symbolism may have been present among the P-IE peoples as a vestige of earlier hunter-gatherer mythologies surrounding wild cattle, though the lack of hunting motifs found in the later myths suggest if these had existed they had become replaced wholesale by farming motifs); or, secondly, the cattle-based motifs were present at the start because the P-IE culture was originally Neolithic.

Our analysis of IE myth has shown the presence of Near Eastern-type cosmogonical imagery as far back as we can trace, that is before certain changes in the Ṛgveda, prior to the start of the second millennium BC; this would suggest such motifs were integrated (if they were not indigenous) at a very early date. Indeed, as we have no evidence for the posited Bronze Age proto-myth on to which the 'foreign' cattle symbolism was hung, we must question why it needs to be present at all. Lincoln's androcentric *Ur*-myth can be better explained as a later cultural adaption, bearing little resemblance to extant IE cosmographies. The only reason to posit a Bronze-Age proto-myth is because we *expect it to be present* based on the hypothesis that IE culture was Bronze-Age. The myths, in isolation, suggest a derivation from Neolithic Near Eastern farming traditions that later developed a more androcentric bent, with earlier goddess figures being replaced or superseded.

As stated above, there could be several explanations for this. The first to consider is that the P-IE peoples had such a mythology because they were in origin a Neolithic Near Eastern people.

1.81 The Anatolian Hypothesis

Such an idea, necessitating a re-appraisal of the dating of the origin of the IE language dispersal, was suggested by Renfrew whose 'Archaeology and Language' (1987) hypothesised that the IE languages dispersed from a common P-IE ancestor not in the 4th millennia BC from the Russian Steppes (the so-called 'Kurgan' hypothesis championed by Gimbutas (1974)), but from Anatolia sometime around 7000 BC, and was the language that had accompanied the spread of farming. Some archaeologists, including Cunliffe have been supportive of the idea (2001), while others, including Anthony (2007) argue that the language shows obvious signs of having been formulated during the 'secondary' Neolithic, accompanying the domestication of the horse. Criticisms of the thesis lead Renfrew to modify his argument declaring that a *Pre*-P-IE culture had originated in Anatolia, while P-IE proper had probably spread from the Balkans c. 5000 BC (2004). Yet despite the unpopularity of his position, Renfrew's work has been supported by academics outside archaeology, by palaeo-linguists (Gray and Atkinson 2003; 2012; Ryder *et al* 2011) and by studies of the development of other World language groups (Greenberg 1987) that argue the diversity and distribution of the IE languages suggest a longer period of development than the current IE dispersal model provides. It is also supported by work on genetic mapping which suggests that the 'genetic structure of current populations speaking Indo-European languages seems…to largely reflect a Neolithic expansion' (Barbujani 2005), though more recent work on genetic spread suggests an alternative view, with evidence that the spread of the Beaker complex in to Britain introduced high levels of steppe-related ancestry, replacing 90% of the gene pool, thus effectively replacing the Neolithic population (Olalde *et al* 2018).

If Renfrew's hypothesis is incorrect, the proposition that Near Eastern-derived myths could have spread with farming via the Balkans to Britain still holds; what must be explained is how and when such cultic imagery came to appear the myths of the IE speakers in the Bronze Age. As we have seen, there is no trace of the postulated pastoralist myth in early IE tradition. If the Pontic-Caspian Steppe theory of IE origins supported by Anthony, Mallory and Gimbutas is correct, then the presence of Near Eastern motifs so early on suggests cultural interchange occurred between IE speakers and farming based societies at a very early date, before the main diaspora.

1.82 The Yamnaya-Cucuteni Hypothesis

One possibility is that there was close contact between the P-IE speakers and a neighbouring farming population. The most widely-accepted theory concerning the origin of P-IE culture is that followed by Mallory, that it originated somewhere on the Pontic-Caspian Steppes; Anthony has proposed the P-IE diaspora coincides with the domestication of the horse, and that the culture's homeland can be placed archaeologically in the region of the Yamnaya culture (2007). Genetic studies show a genetic spread from this area throughout Europe and beyond in the Bronze Age (Allentoft *et al* 2015; Haak *et al* 2015) – though a more recent genetic study suggests that this picture is rather too simplistic, with regards to expansions south-eastwards from the Steppes, where evidence exists of 'distinct migrations bringing West Eurasian ancestry into South Asia before and after but not at the time of Yamnaya culture' (de Barros Damgaard *et al* 2018); accordingly, it is impossible to tell is whether the speaking of IE languages accompanied the Yamnaya expansions westwards, as this new evidence suggests the arrival of IE languages in Anatolia, at least, was not bought by genetically Yamnaya peoples.

One explanation for Near-Eastern-type motifs in P-IE myth is that wherever the IE peoples travelled (whether these were genetically Yamnaya or not), the Neolithic strata was consistent and uniform, thus each language group assimilated similar concepts. While this is possible, the alternative explanation is that the myths all stem from an original integration event, which acted as a blueprint for future integrations with Neolithic cultures during the diaspora.

How might the Yamnaya have got hold of a Neolithic mythos? It is unlikely to have been indigenous; the Yamnaya were derived partly from Steppe Mesolithic hunter-gatherers and partly from another population of hunter gatherers from the Caucasus (Jones 2015). However, they did not develop in isolation but were influenced by peoples to their south and east, the Maykop culture and the Cucuteni–Trypillia culture, genetically linked with Neolithic Anatolian farmers (Nikitin 2017). Although Gimbutas theorised the latter culture was one of the first to be destroyed during IE expansion, this has not been supported archaeologically, and it may have been that some form of integration occurred between these neighbouring cultures. This might have seen cultural sharing whereby a Yamnaya language and mobility was integrated with knowledge of the Old European farming cults. Such integration between the Yamnaya and Cucuteni-Trypillia cultures has been suggested by Mallory:

> Ethnographic evidence suggests a very fluid boundary between mobile and settled communities, and it is entirely probable that some pastoralists may have settled permanently whilst Tripoleans may have become integrated into the more mobile steppe communities. The resultant archaeological evidence certainly suggests the creation of hybrid communities. (1989, p.237)

One argument against such integration is the short amount of time offered for such interchange, between the rise of the Yamnaya c. 3300 BC and the demise of the Cucuteni-Trypillia culture c. 3000 BC; yet recent genetic studies suggest such integration may have occurred earlier, with evidence for genetic contact between the Cucuteni–Trypillia culture and steppe populations from the east from as early as 3600 BC (Mathieson *et al* 2018). This might suggest the Yamnaya culture developed from out of a population already culturally and genetically linked to neighbouring farming cultures.

Kristiansen suggests similar integration is apparent in the formation of the Corded Ware culture that arose in the third-millennium BC to the immediate west of the Yamnaya lands; it is reflected archaeologically in certain Corded Ware cemeteries where most males were of Pontic-Caspian (Yamnaya) stock, while most of the women were local (Sjögren *et al* 2016). This intermarriage between local women and invading males is mirrored in Irish myth where the first act of the invading Milesians (Gaels) is to marry the three tutelary goddesses of the land, Ériu, Banba and Fódla (*Lebor Gabála Érenn).* The myth suggests the taking of new land required the taking the indigenous goddesses to wife. In the case of the expanding Yamnaya, such local women and wives would have been the direct source of information on farming technology, method and cult. They would have been the mouthpiece of a native farming-based mythology. It is easy to imagine elements of their farming cults becoming incorporated in to Yamnaya myth; if a similar process had already occurred prior to expansion, i.e. in interactions between Yamnaya or other (earlier) Steppe culture males and Cucuteni-Trypillia females, it would have meant that later Yamnaya 'invaders' would already have possessed a partially Neolithic mythology, so that when their cultures/languages reached Europe and later Britain they were already primed for integrating similar traditions, traditions which would by their shared Anatolian farming ancestry be close to those of the 'Old Europeans', of Near Eastern heritage, and not appreciably different to those of the Cucuteni–Trypillia peoples.

This archaeological fact regarding the genetic ancestry of the Corded Ware culture mirrors such mythic prototypes as the rape of the Sabines, where incoming tribal men take local women to wife, though Mallory suggests that to look for this myth archaeologically is too trite. Instead, he suggests such a myth reflects a phenomenon known as the 'war of the functions', a theory of Dumézil's, which argues many conflicts in IE myths represent a 'jostling for position' in the hierarchy of IE society between the warrior (and ruling) classes and the agricultural class (Dumézil 1973, Chapter 1). Mallory suggests this 'war' occurred in P-IE times:

> Basically, the parallels concern the presence of first-(magico-juridical) and second-(warrior) function representatives on the victorious side of a war that ultimately subdues and incorporates third function characters, for example, the Sabine women or the Norse Vanir. Indeed, the Iliad itself has also been examined in a similar light. The ultimate structure of

> the myth, then, is that the three estates of Proto-Indo-European society were fused only after a war between the first two against the third. (2005, p.139)

This 'war of the functions' might explain changes in the myths that saw the ousting from favour of the local goddesses, usually associated with farming and fertility, that Doniger mentioned. It suggests the 'war' was an internal re-evaluation of society and concurrent re-evaluation of myth brought on by a necessary rise in the status of the warrior in the Bronze Age. If so, we reach a position not unlike that which we described above: Indo-European myth as rooted in early (probably borrowed) Neolithic symbolism, which later developed, especially during the I-I period, towards androcentrism, but one not necessarily reflecting an original (now lost) Yamnaya mythology.

Whether the P-IE language arose amongst the Yamnaya or had already been spread throughout Europe with farming as Renfrew suggests, is still not settled; either way a Neolithic farming mythology appears within IE myth, either through being inherent or through borrowing, allowing us to attempt to reconstruct much of its nature and ascertain whether it might have formed the shaping myth behind Neolithic ritual sites in Britain.

1.10 Conclusion

A close inspection of IE myths has rendered Lincoln's reconstructed P-IE cosmogony involving twin brothers obsolete. Instead, we are left with numerous examples (by re-instating the female to her original role) of a male and a female (rich cow symbolism; associated with rivers and the Milky Way), who together form the cosmos in a manner reminiscent of Near Eastern World Parent cosmogonies, whose sundering from union result in the creation/release/(re)birth of the sun.

Lincoln's male-oriented pastoral myths developed within a limited geographical area (the I-I language zone) after the original female/cow symbolism had been removed/transformed due to a 'power shift' towards androcentrism. This is of extreme importance for Lincoln's reconstruction must give way to one with direct and obvious parallels to Near Eastern models. Such Near Eastern analogues might be expected had the myths evolved in Anatolia or the Balkans amongst cattle-rearing farmers, as Renfrew posits, but equally may have become integrated into P-IE myth through borrowing neighbouring farming cultures, such as the Cucuteni-Trypillia culture, before the main diaspora west in to Europe and eastwards in to Asia.

If this analysis is placed into the dendrograph we see that the initial spread of Lincoln's P-IE myth (Fig 11) does not reflect the facts. If the examples that fail to support his thesis are removed we find the androcentric forms he suggests as primary are now limited to the eastern (I-I) versions, and even here we find no evidence for *Manu as twin to *Yemo (Fig 12). Instead,

if the spread of the male and female (cow) motif is plotted (Fig 13) we find versions in both eastern and western branches, suggesting this form has the better claim to having been the P-IE cosmogony – a hypothesis that suggests a much earlier date for Neolithic influence than Lincoln's model, and suggests IE myth is a potential source of Neolithic symbolism for the scholar to mine.

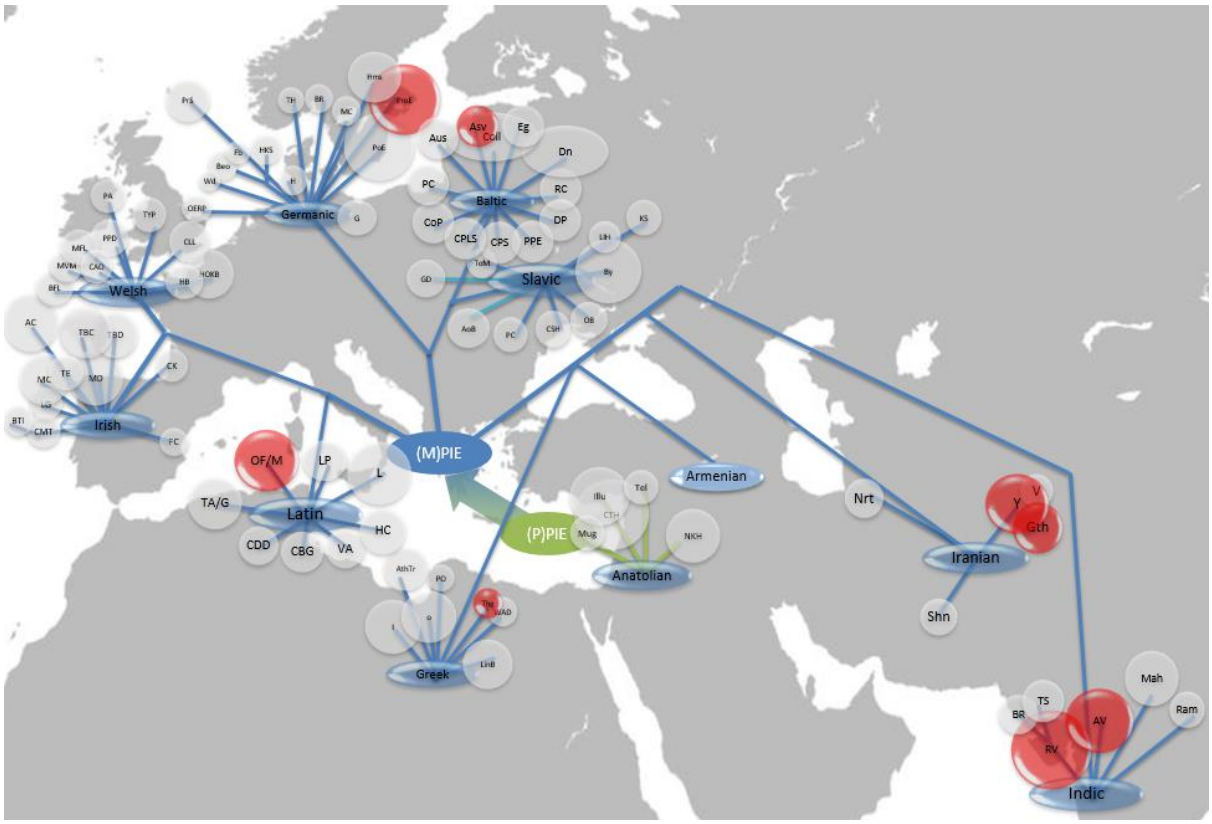


Figure 11. Spread of Lincoln's posited anthropocentric P-IE comogony, the red areas indicating the presence of later variants of the proto-myth in later vernacular mythologies

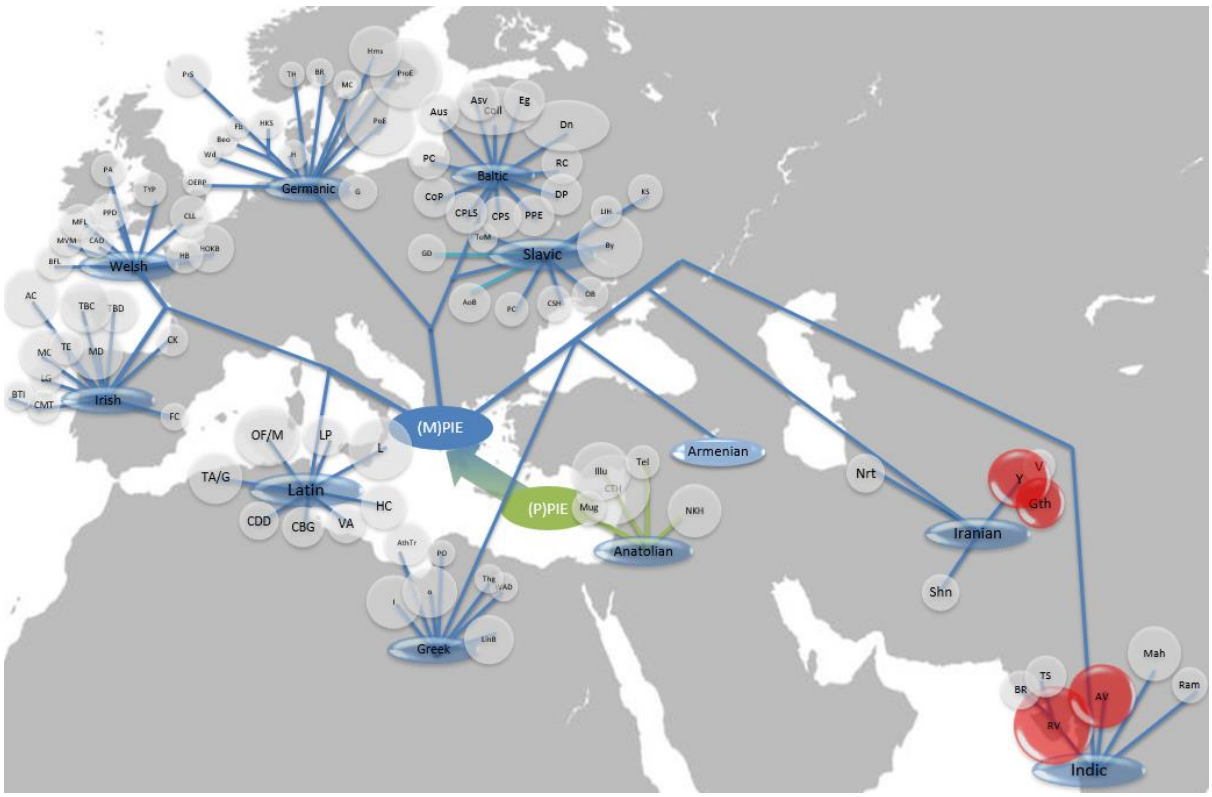


Figure 12. Occurence of anthropocentric motifs

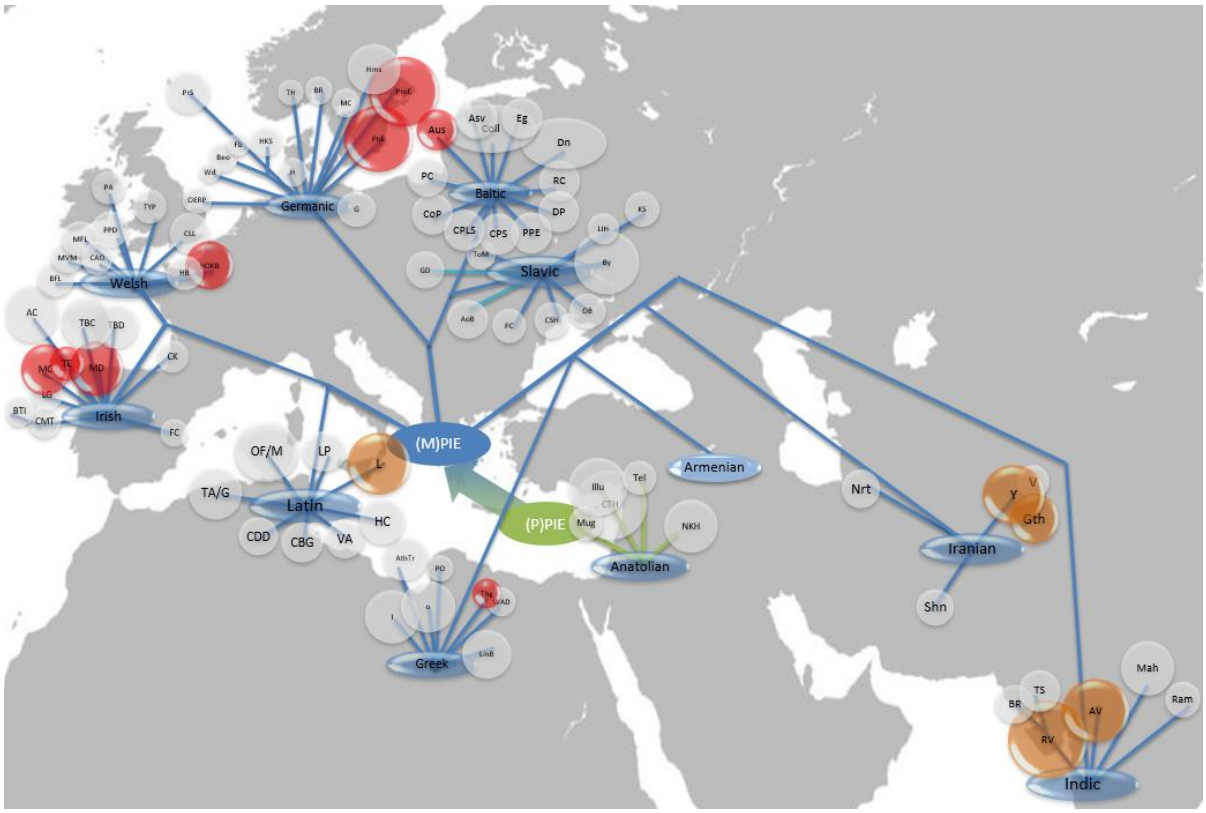


Figure 13. Spread of author's reconstructed male-female cosmogony (orange circles represent where a male-female original was later replaced by an androcentric version of the myth)

Chapter Two: The Cattle Theft - A Seasonal Myth?

In the preceding chapter it was argued that the Lincoln's reconstruction of the P-IE cosmogony, influenced by the consensus belief in a Bronze-Age (pastoral) origin, had glossed over an earlier Neolithic stratum, eclipsed by the time of the Vedas, in which a female played the role of twin/partner to *Yemo. Lincoln had taken as his starting points a set of I-I myths antagonistic to this primal cosmogony, rendering his reconstructions invalid as P-IE, yet by claiming to be so, setting up a circular argument in which the reconstructed myth could be used to support a 'late' (post-Neolithic) formation of the language group.

In the present chapter another key 'proto-myth' discussed by Lincoln, that of the cattle theft, will be analysed to see whether this myth, considered an 'imperialist' myth justifying the theft of cattle and land of 'non-Indo-European' groups during IE expansions, might similarly suggest Neolithic origins. This analysis will be vital for it will be proposed that this myth is the most likely candidate for Bradley's 'shaping mythology', containing astronomically derived symbolism which can be tested for inclusion in the design of the ritual structures of the British and Irish Neolithic.

2.1 Lincoln's view of the cattle raiding myth

The cattle-theft myth forms part of a larger complex of motifs typified by the defeat of a dragon or (three-headed) serpent by a hero, expressed in such diverse forms as Apollo slaying Pythia at Delphi and St George slaying the dragon. Watkins (1995, p.302) has demonstrated how this deed remains as a frozen lexical expression in many IE literatures, and stems from an original formula:

HERO	SLAY (*$g^{\mu}hen$-) SERPENT (with WEAPON) (with COMPANION).

Rendered in P-IE as *(hɪe)g^{wh}ent hɪóg^{wh}im

Lincoln's analysis of such myth leads him to:

> …reconstruct a myth in which an Indo- European hero whose name was *Trito, "Third," suffered at the hands of a monstrous figure, a three-headed serpent who was explicitly identified with the aboriginals of the area in which the myth was told. In the first encounter, this serpent stole some cattle belonging to the hero or to someone close to him, but in a second meeting (when-according to the Indo-Iranian version-the hero was aided by a warrior god and fortified by an intoxicating drink) he defeated the monster and recovered the cattle. (1976, p.58)

> '…the myth with which we will be dealing is one which has long been familiar to scholars. In truth, it combines two of the best known mythic themes: that of slaying a serpent or monster, and that of stealing a neighbor's cattle. The former is almost universal in its dispersion, being seen in such well-known versions as the stories of Beowulf and Grendel, Marduk and Tiamat, Re and Apophis, or such less noted versions as the Ngaju Dayak myth of the conflict of Hornbill and Watersnake, while the cattle-raiding theme is known among all people who keep cattle, appearing in such versions as the struggle of Nuer and Dinka, Masai and Kikuyu, or David's raids while living among the Philistines. (*ibid*, pp.43–4)

It is notable that Lincoln states the similarity of his theme to the cosmogony of Marduk and Tiamat, yet his analysis of the IE myths suggests a differing emphasis. He suggests the P-IE version has unique characteristics – most notably the appearance of a hero named 'Third' who slays the (tricephalic) serpentine monster who is to be *explicitly linked with non-Indo-European populations* and whose name is usually derived from IE **ŋg^{W}hi* – or **hₑillu*, 'snake' or 'serpent/eel'.

The Ṛgveda 10.8.8-9 gives a clear example of the act involved:

> Aptya, knowing the ancestral weapons and impelled by Indra, did battle. Having killed the three-headed, seven-bridled one, Trita drove off the cattle of Tvaṣṭṛ's own son. The mighty lord Indra struck down the conceited one who had sought great power. Driving forth the cattle of Visvarupa, Tvaṣṭṛ's own son, he ripped off those three heads. (Doniger O'Flaherty 1981, p.46)

Lincoln illustrates the spread of the myth thus:

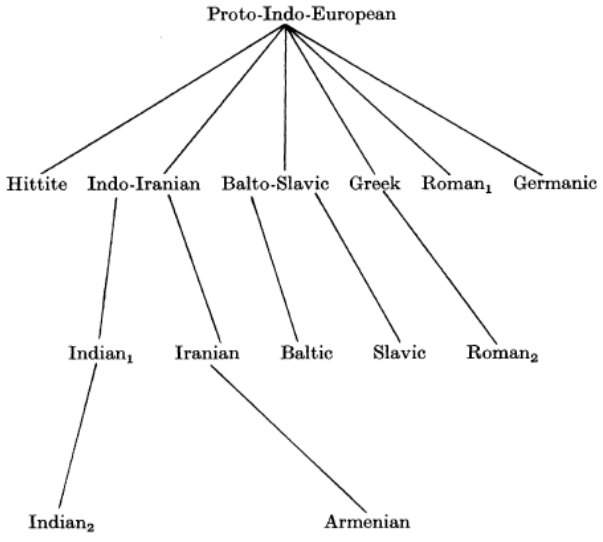


FIG. 1.—Variants of the myth. Indian$_1$ = original version, Trita and Viśvarūpa; Indian$_2$ = remodeled version, Indra and Vṛtra; Roman$_1$ = independent version, Horatius and the Curiatii; Roman$_2$ = dependent version, Hercules and Cacus.

Figure 14. Lincoln's sources for his reconstructed cattle-raiding myth (source: Lincoln, 1976)

Lincoln's examples will not be scrutinised in the same detail as those used in his *Yemo myth, as the basic plot-line of his reconstruction is valid – what does need examining is the origin and use of the myth, which, he states:

> …served as a model or prototype for all subsequent cattle raids. The mythic hero *Trito established the proper form of the raid for his IE descendants… Finally, an ethical concern seems to be present in our myth, for it must be noted that *Trito's raid was not unprovoked aggression but followed upon the tricephal's earlier theft. It is thus justified, for the IE hero is only taking back that which rightfully belongs to his people. Moreover, he uses open force to regain his stock, in contrast to what must have been regarded as the despicable stealth of the tricephal. The myth is an imperialistic myth, it is true, but even imperialists need their rationalizations…. this myth of "Third" seems to be a myth of the warrior function, establishing the model for all later men of arms. (1976, pp.63–4)

West summarises the cattle-raiding myths in a similar fashion:

> 'A form of aggression often celebrated in Indo-European literatures is the cattle raid. The domestication of the horse allowed the early pastoralists of the Eurasian steppe to herd much larger numbers of animals than before, roaming over a vaster area. It also provided a convenient means of driving off other people's flocks and herds. This was the easiest and quickest way to acquire wealth, which was commonly measured in cattle. But it was liable to provoke fighting.' (2007, p.451)

This widespread distribution of this myth, he goes on to say, supports the idea of an Indo-European expansion from out of the Eurasian steppe (*ibid*, pp.451–2). While the possibility exists that such a myth could (and probably did) serve as a prototype for martial acts – this does not mean it was primarily formed with such an intention; it must be questioned whether it originated on the Steppe or whether it had been formulated elsewhere with a different meaning. Mallory states that:

> 'although Lincoln's study is primarily directed at the behaviour of the Indo-Iranians, his frequent recourse to general Indo-European mythology, especially in the reconstruction of these mythic charters, suggest that the roots of the cattle-keeping religion and world view, with its attendant social ramifications, might also be projected back to Proto-Indo-European society.' (1989, p.138)

Yet herein lies the problem: in the last chapter it was noted how the I-I traditions had effectively removed the goddess from their cosmogony, and were therefore a *development* of the P-IE mythos and not indicative of its original form; might the same be true of the cattle-theft? If so, to 'project' that new emphasis back on to P-IE society as Mallory suggests, might be to misrepresent the original meaning of the myth.

2.11 The Serpent: Symbol of the non-Arya?

Lincoln reads the serpent as a symbol for non-IE populations, and the myth composed to justify the expansions of this culture - an argument that fits the consensus view of the P-IE peoples as nomadic, expansive, pastoralists. He says:

> As we have seen, the Indo-European *Trito myth contains two major elements. It is simultaneously a myth of the slaying of a monster and a myth of the first cattle raid. With regard to the former theme, *I have tried to emphasize the explicit identification of the monster as an outsider, a non-Indo-European, a thief and a usurper*. Moreover, his serpentine form marks him as being in close connection with the earth. He is the aborigine, uncivilized and bound to his land, who opposes the IE invader and meets defeat at his hands. His three heads may be yet another way of marking his foreign status, for, as Willibald Kirfel has demonstrated in his work of sweeping scope, Die Dreikopfige Gottheit, the three-headed god is a major figure in the pantheon of pre-Indo-European peoples in India and the Mediterranean but *never figured in that of the Indo-Europeans themselves*. The description of the tricephal's defeat is thus the description of the Indo-European victory. (1976, p.62 *my italics*)

In Near Eastern myth the serpent/dragon (Apohis/Tiamat) is interpreted as a supernatural figure yet here the IE monster is interpreted as an aboriginal (non-IE) human population, a sublimation of an outside group into a symbolic being – whose shape is chosen because that monster is a pre-existing symbol of divinity *within those foreign cultures*. This analysis rests on two hypotheses: firstly, that the tricephal was a divinity in pre-IE cultures and secondly, that the myths themselves make it clear that this is what the serpent represents.

Regarding the first hypothesis, triple-headedness is a symbol commonly found in Hindu and Celtic iconography (Green 1989, p.19); to state that it 'never figured' in Indo-European iconography is simply untrue; besides, given the IE pre-occupation with 'triplicity' (Dumezil 1958), especially as displayed in the three 'functions' of IE society, one could argue that the tricephal god is an *exemplar* of IE 'tripartite' symbolism: the Norse Ymir is killed by *three* gods, and the existence of a cosmic being split in to three parts to yield the tripartite IE society (as discussed by Stone 1996, p.13; Lincoln 1975) suggests the primal being **Yemo* (and his twin sister) might as easily be regarded as somehow 'triple' in origin. Visvarupa, mentioned above, is not depicted as a foreigner but the son of the artisan god Tvaṣṭṛi.

Lincoln's second hypothesis, that the tricephal represents a human population, rests on the proposition that the proto-myth 'clearly' equates the serpent with '*the aboriginals of the area in which the myth was told'*, yet this is not 'clearly' stated in the myths. Lincoln uses as his sources just a few variants of this theme, namely**:**

> 'Indian (Trita and Visvarupa/Ahi), Iranian (Thraetaona and Azi Dahaka), Armenian (Vahagn and the dragon), Greek (Herakles and Geryon), dependent Roman (Hercules and Cacus), and Germanic (iconographic only).' (1976, p.46)

How many of these versions *clearly* portray the serpent/tricephal as a 'non-IE local'? The Germanic evidence can be dismissed immediately, it is iconographic, derived from possibly fallible drawings of objects now lost (the Gallehus drinking horn, early 5th century AD (Fig15); there is no way to tell if the three-headed humanoid (or three serpents) depicted represents a supernatural entity or a human population (arguably the serpentine monsters of later Germanic literature are in no wise human); nor can it be ascertained if any figure named *Trito is depicted, though no recorded dragon-slayer in Germanic tradition goes by such name or derivative.

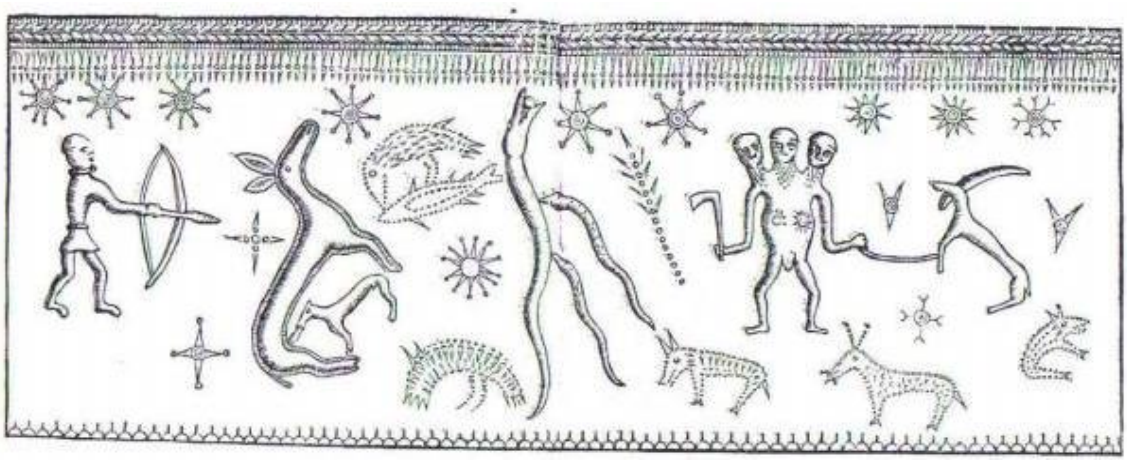


Figure 15. Tricephallic being and rescuing hero from the Gallehus drinking horns (engraving by J.R. Paulli (1734), reprinted in Klingenberg 1973)

Strangely, Lincoln favours an interpretation in which the tricephal on the drinking horn represents *Trito, the hero, contrary to his own argument that the tricephal is a non-IE figure. It seems more likely, however, that *Trito is the figure on the left with the bow, with three stars above his head, the imagery of which will be discussed later.

Lincoln's Greek and Roman sources similarly make no assertion that the monster has anything but supernatural parentage (a grandson of Medusa and a son of Vulcan, respectively). The only source that could support Lincoln's hypothesis is the reference to the tricephal in the Ṛgveda as *dāsa-, which Lincoln states signifies *'an aboriginal inhabitant who is inimical to the Indo-European invaders.'* (1976, p.52). Yet the term dāsa – 'enemy/slave' is problematic; it is used as a cover-all term for 'foe' whose connotations as non-IE are by no means clear as many supernatural forces in the Ṛgveda are termed Dāsa, suggesting it originated as term for 'demon/enemy of the gods', not as a racial signifier. Lincoln's lone example fails to convince.

That said, as established previously, the eastern branches of the IE especially had diverged over time from the original P-IE schema towards a more androcentric/warrior worldview. Similarly, the symbolism of conquering a (supernatural/demonic) enemy inherent in IE myth could have been altered to justify expansionism. But to use these sources, as Lincoln does, to claim that the

cattle-stealing myth was *in origin* an expansionist myth, is problematic. Once more it stems from the belief that the P-IE peoples were pastoral nomads, which may be the case, but which has biased the interpretation of the myth.

2.2 Serpent as cosmogonic in origin

Brenneman questions Lincoln's reconstruction of the P-IE cattle-theft, arguing that the Irish forms of the myth do not fit his reconstruction, but instead contain traces of an earlier, non-IE religious complex. The Irish material, he argues, is more female oriented, with cattle and water depicted as the gifts of a goddess, the rescue of which is a symbol for the winning of (female) sovereignty.

He states:

> Despite the common linguistic roots within the Indo-European language group, the cultural heritage of the Celts from their earliest beginnings differs from that of the Indo-Europeans who invaded India, Greece, and Iran. This is due to the difference in ecological contexts of the two peoples. At the center of earliest Celtic culture was the cultivation of cereal grains which can be identified in central Europe from as early as 6000 B.C. (1989, p.342)

Brenneman agrees it is their agricultural background which gives these myths different emphasis from the I-I material. He assumes, albeit argued on the back of the consensus opinion, that the eastern branch (I-I and Greek) is more 'IE' than the western, and that therefore the Celtic myths are not IE derived.

He goes on to say:

> When we say the predominance of agriculture, we mean that there developed in Celtic culture many of the same cultural forms that attach themselves to less modified pastoral nomadic societies such as male leadership with an emphasis on war, aristocratic chieftainship, and the power of animals, particularly cattle and horses. These forms, however, were not sources of power which lay at the center of the culture but, rather, were dependent upon another power source for their existence. This power source was the earth which was imaged as a goddess and which sanctioned and made possible all of the masculine, pastoral nomadic structures mentioned above. Feminine power, for the most part, lay in the background, or more precisely under-ground in what was termed the Otherworld. It is clear, however, from a terse survey of Irish myth that male leadership was dependent upon the power of wisdom and regeneration known as sovereignty and was possessed by various feminine deities or demadeities. (*ibid*, p.343)

Moreover, he states that the cattle myth is not based on a militaristic exploit but forms the backbone of a seasonal ritual of renewal that:

> … reflect[s] the seasonal cycle of death and rebirth of the land and of the *tuath*, the Irish political unit identified with the land or place in which they dwell... In the case of the cattle raid, king and queen are represented by the hero and his cattle. In some myths the cows are the possession of a lady; thus, a symbolic equation is established between cattle, queen, and

> cow lady. The lady and the cows are one. When the cows are stolen, symbolic death of the land ensues. When they are recovered, rebirth occurs. (*ibid*, p.348)

The cow and (female) sovereignty of the land here are one and the same, contrary to Lincoln's view that the cows symbolise flesh and blood cattle alone, and that such myths which involve the rescue of a woman are later misinterpretations caused by a confusion of terms, both being 'milk-giving females desired by warriors' (1976, pp.52–53). Yet the myths themselves suggest the serpent and the cow are far from mundane; clear cosmogonic imagery is attached to them.

2.22 Vṛtra

The Ṛgveda has many hymns celebrating the cattle theft and defeat of the dragon. The hero of the deed is Indra, king of the gods, (whose symbol is the bull) – and his opponent is Vṛtra, the 'restrainer'. Alternatively, that which restrains, or holds the 'treasure' within itself (symbolised as cows, milk, water, females and the sun) is *Vala*, the stony cave in which the cows are hidden by the demons (Asuras/Pani/Dāsa) who have 'stolen' the cows, thereby giving them the (vegetal) power of regeneration after death, and from whom it must be reclaimed. The treasure is often given as 'soma' a semi-mythical drink of immortality, possibly in origin a sacred narcotic (Wasson 1968, pp. 95–147).

Hymn 1.32 offers a good starting place for analysis, referencing cows as symbols of fertility-renewing waters, while alluding to an original male-female pairing which are split to create cosmic and earthly waters:

> Let me now sing the heroic deeds of Indra, the first that the thunderbolt-wielder performed. He killed the dragon and placed an opening for the waters; he split open the bellies of mountains.
>
> He killed the dragon who lay upon the mountain; Tvaṣṭṛ fashioned the roaring thunderbolt for him. Like lowing cows, the flowing waters rushed straight down to the sea.
>
> Wildly excited like a bull, he took Soma for himself and drank the extract from the three bowls in the three-day Soma ceremony. Indra the Generous seized his thunderbolt to hurl as a weapon; he killed the first born of dragons.
>
> Indra, when you killed the first-born of dragons and overcame by our own magic the magic of the magicians, at that very moment you brought forth the sun, the sky, and dawn. Since then you have found no enemy to conquer you.
>
> With his great weapon, the thunderbolt, Indra killed the shoulderless Vṛtra, his greatest enemy. Like the trunk of a tree whose branches have been lopped off by an axe, the dragon lies flat on the ground.
>
> …
>
> Without feet or hands he fought against Indra, who struck him on the nape of the neck with his thunderbolt. The steer who wished to become the equal of the bull bursting with seed, Vṛtra lay broken in many places.

> Over him as he lay there like a broken reed the swelling waters flowed for man. Those waters that Vṛtra had enclosed with his power – the dragon now lay at their feet.
>
> The vital energy of Vṛtra's mother ebbed away, for Indra had hurled his deadly weapon at her. Above was the mother, below was the son, Dānu, lay down like a cow with her calf. (Doniger O'Flaherty 1981, pp.149–150)

This hymn links the cows with water pent-up within the dragon. The connection to the killing of Tiamat 'salt-water' by Marduk 'solar calf' is obvious: Tiamat's death frees the waters (of the earth and heavens) and from her body Marduk forms the cosmos (having previously killed her male counterpart Apsu 'the abyss'/'sweet water'). Although Tiamat is portrayed in later imagery as a dragon, the description suggests bovine characteristics: she has udders, which are fashioned into mountains by Marduk. Indra's deed is similarly cosmogonic as it brings in to existence the sun, moon and dawn from splitting open the belly of the mountain, as the mountain Anki was divided by Enlil. Dawn itself is personified in the Ṛgveda as the 'rosy' cows, as we see in hymn 3.31 (Doniger O'Flaherty 1981, p.153)

> He himself, Indra killer of Vṛtra, with songs released the rosy cows together with the offspring and the oblations. Stretching far the cow was milked of the sweet honey-like butter that she had held for him.

This is the release of waters and light, the creation of a new day, and it is accomplished by the splitting a primal pairing of mother and son. The son, Vṛtra, is felled like a 'great log' and forms the earth. The mother (Dānu), lying above her son forms the waters that are 'above'. These could either be interpreted as rainclouds or, in light of the stellar aspects of Tiamat and Nut, the heavenly waters of the Milky Way. Like Tiamat, Dānu is both serpent and cow, but also twinned with her son, for in Hymn 2.12 we read:

> Who is Indra? He… who killed the violent serpent, the Dānu, as he lay there…

The son, then, is of identical nature to his mother. Dānu, Lincoln observes, comes from:

> *Dhainu- (Skt. dhenu- = Av. daenu-), one of the most frequent terms for "cow." Yet, as Benveniste has shown, the word means nothing more than "one who lactates, gives milk," being derived from the verb "to give milk, nourish" (1976, p.53)

Some, though, suggest it simply means 'to flow' and thus ultimately 'river' and is to be found in many river names including the Dee, Don, Danube, Dnieper and Dniester, as well as in the name of the Irish gods, the Tuatha Dé Danann, the people of the goddess Danu. The mother of Vṛtra, then, is like Tiamat in being a water/cow/serpent and the origin of rivers (both earthly and heavenly), and Nut who is both cow and a Milky Way goddess and the origin of the flowing of the Nile, who is separated from an incestuous union with the earth. Just as Auđumbla creates the frost giants (titanic forces) from out of the ice, so Dānu is the mother of the Asuras (demons), specifically the Danavas, her children by Kashyapa.

This is a cosmogonic myth, yet also cyclical, for it mimics the daily ebb and flow of light and the yearly ebb and flow of fertility. The myth of the god(s) overcoming demons can thus be read as the victory of the active creative element over the restrictive stasis from which it emerges; the titanic creative forces at the start of creation – forces that only become regarded as negative in the daily and yearly cycles when the year slips back into unproductive stasis and chaos (night/winter), necessitating a re-enactment of the creative act to recreate the cosmos.

This is shown most clearly in later Egyptian imagery from the New Kingdom where the sun at the end of each day enters the mouth of Nut and is born from her womb each morning; the gestation period involves a combat within her, as the sun-god battles the monsters of night through 12 stellar regions of the underworld, ending with the final victory of the sun over the chaos-serpent Apophis.

The serpent's hoarding of the water/fertility during the night/winter is a return to the stasis of the unified waters prior to creation that will (at daybreak/in the spring) as it was at the start of time, be rent in twain to create/renew the cosmos. The cattle theft myth and the dragon-slaying are simply a repetition of the themes of the IE cosmogony which echoes some aspects of the Near Eastern variants (though it must be pointed out that the extant Egyptian cosmogonies do not involve cattle rescue or dragon-slaying, though variants of both themes do appear in linked myths, as we have seen). The chaos dragon and the cattle-stealing dragon are closely connected: the incestuous embrace of the twinned beings, of Vṛtra and Dānu are connected; and arguably the three-headed serpent and the giant Ymir rent apart by three gods are connected; this is not to say all these couplings are identical or were seen to be so, but each symbol rises out of that primal image of sunrise and sunset, of the rescue of light out of darkness, and its return. So that the birth of Re from the maw of the serpent of the night is both a daily and seasonal occurrence but is also suggestive of the pattern of the original birth from chaos that we find in the Tiamat myth.

2.23 Illuyanki

The defeat of the serpent Illuyanki of Hittite myth illustrates the above:

§1 (This is) the text of the *purulli* (festival) for the [. . .] of the Storm-god of Heaven, according to Kella, [the "anointed priest"] of the Storm-god of Nerik: When they speak thus—

§2 "Let the land grow (and) thrive, and let the land be secure (lit. 'protected')!"—and when it (indeed) grows (and) thrives, then they perform the festival of *purulli*.

§3 When the Storm-god and the serpent came to grips in (the town of) Kiškilušša, the serpent smote the Storm-god.

§4 (Thereafter) the Storm-god summoned all the gods (saying): "Come in! Inara has prepared a feast!"

§5 She prepared everything in great quantity—vessels of wine, vessels of (the drink) *marnuwan* (and) vessels of (the drink) [*wa*]*lḫi*. In the vessels she ma[de] an abundance.

§6 Then [Inara] went [to] (the town of) Ziggaratta and encountered Ḫupašiya, a mortal.

§7 Inara spoke as follows to Ḫupašiya: "I am about to do such-and-such a thing—you join with me!"

§8 Ḫupašiya replied as follows to Inara: "If I may sleep with you, then I will come and perform your heart's desire!" [And] he slept with her.

§9 Then Inara transported Ḫupaši[ya] and concealed him. Inara dressed herself up and invited the serpent up from his hole (saying): "I'm preparing a feast—come eat and drink!"

§10 Then the serpent came up together with [his children], and they ate (and) drank—they dra[nk] up every vessel and were sated.

§11 They were no longer able to go back down into (their) hole, (so that) Ḫupašiya came and tied up the serpent with a cord.

§12 The Storm-god came and slew the serpent. The (other) gods were at his side.

(Beckman 1982, p.62)

Illuyanki contains both **hᵢillu*, and **ŋgʷhi* in his name, rendering him 'snake/eel-serpent'. An alternate text states how the storm god lost his eyes and heart to the serpent, and how the daughter of the serpent marries the son of the storm god, and returns them, allowing him to have victory over her father the serpent.

§21′ Because? [. . .] spoke. The ser[pent] defeated the Storm-god and took (his) h[eart and eyes.] And him the Storm-god [. . .]

§22′ And he took as his wife the daughter of a poor man, and he sired a son. When he grew up, he took as his wife the daughter of the serpent.

§23′ The Storm-god instructed (his) son: "When you go to the house of your wife, then demand from them (my) heart and eyes!"

§24′ When he went, then he demanded from them the heart, and they gave it to him. Afterwards he demanded from them the eyes, and they gave these to him. And he carried them to the Storm-god, his father, and the Storm-god (thereby) took back his heart and his eyes.

§25′ When he was again sound in body as of old, then he went once more to the sea for battle. When he gave battle to him and was beginning to smite the serpent, then the son of the Storm-god was with the serpent and shouted up to heaven, to his father:

§26′ "Include me—do not show me any mercy!" Then the Storm-god killed the serpe[nt] and his (own) son. And now this one, the Storm-god [. . .]

(*Ibid*, p.190

The aid of the serpent/demon's daughter is a motif that will be examined shortly (see 2.42). The serpent, the alternate text tells us, hoarded the waters of the earth in his lair – but after feasting is unable to return to his hole and block the waters, which run free – allowing Inara to return them to the king.

§17 Inara [went] to (the town of) Kiškil[ušša] (and) set her? house and [the river?] of the watery abyss? [into] the hand of the king—because (in commemoration thereof) we are (re-)performing the first *purulli*-festival—the hand [of the king will hold? the house?] of Inara and the riv[er?] of the watery abyss?. (*ibid*,

p.19)

2.3 The release from the stone cave

A variant of the serpent-slaying mythos sees the serpent portrayed as a mountain or stone cave in which the (potential) light/moisture is imprisoned until sundered in twain by the god of air (atmosphere/storms) – a variant of the cave of Illuyanki that rests above (and so blocks) the waters of the abyss.

In the Ṛgveda this 'mountain/cave', as stated above, is called *Vala*, a variant of the serpent Vṛtra, for Vala is said to be a 'stone serpent' (Watkins 1995, p.72); similarly a serpent associated with a fiery mountain of rebirth in the east is said to be made of flint in the Egyptian Coffin Texts (Graves-Brown 2008, p.11). Vala means 'enclosure', 'cave' or 'mountain'. The defeat of this enclosing figure corresponds to the rescue of light from the clutches of night, or the birth of day from the darkness of chaos at the start of time.

This is even more explicit in hymn 2.12 from the Ṛgveda:

> ‘1. The god who had insight the moment he was born, the first who protected the gods with his power of thought, before whose hot breath the two world halves tremble at the greatness of his manly powers, - he, my people, is Indra.
>
> 2. He who made fast the tottering earth, who made still the quaking mountains, who measured out and extended the expanse of air, who propped up the sky – he, my people, is Indra.
>
> 3. He who killed the serpent and loosed the seven rivers, who drove out the cows that had been pent up by Vala, who gave birth to fire between two stones, the winner of booty in combats – he, my people, is Indra.
>
> (Doniger O Flaherty 1981, pp.160–61)

Here Indra is depicted in a manner reminiscent of the Mesopotamian Enlil or the Egyptian Shu, the wind that creates the cosmos by the division of the world parents, or the world mountain.

The hymn continues in the same vein:

> 10. He who in the fortieth autumn discovered Śambara living in the mountains, who killed the violent serpent, the Dānu, as he lay there, he, my people, is Indra.
>
> 11. He, the mighty bull who with his seven reins let loose the seven rivers to flow… he, my people, is Indra.

Indra as creator of the cosmos through the destruction of Vala is clear in this hymn:

> 8.14 5. The sacrifice made Indra grow greater when he rolled back the earth and made the sky his own diadem.
>
> 7. In the ecstasy of soma, Indra spread out the middle realm of space and the lights, when he shattered Vala.
>
> 8. He drove out the cows for the Aṅgirases (poets), making visible those that had been hidden, and he hurled down Vala headlong.
>
> 9. the lights of the sky were made firm and fast by Indra, so that they cannot be pushed away from their fixed place. (*ibid*, p.159)

Here, again, the comparison with Marduk - fixing in place the stars after the defeat of the serpent, creating the ‘middle realm’ of air between earth and the heavens through an act of separation of the Vala ‘mountain’. As both Vala and Ouranos are derived from the P-IE **wel-* ‘to cover/enclose’ this Indo-Aryan myth is related to the division of earth from sky, Gaia from Ouranos, found in Greek tradition.

The image of release from the mountain is found in the Mesopotamian *Akitu* ritual, a 12-day ceremony that retells the release of Marduk (in his fertility aspect) from the mountain (represented by twin peaks) by the actions of wife Sarpanītū - ‘the brightest of the stars’, and his bow and arrow wielding son, Ninurta, an act that has resonance for the fertility of the fields; the

double-peaked mountain as depicted here or as in the Egyptian horizon hieroglyph a visual trope of the sun bursting from out of the Vala cave (Fig 17, right).

Figure 16. Cylinder seal showing Marduk rising from the mountain of the underworld. Akkadian period (ca. 2250 BC), London, British Museum.

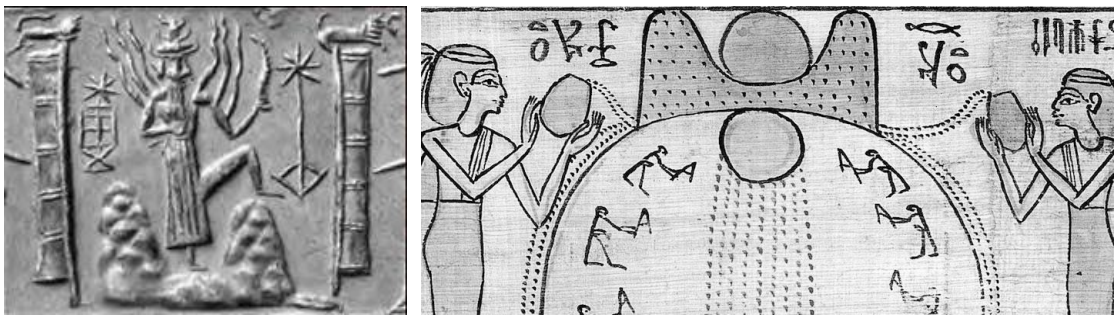


Figure 17. (Left) Marduk or Shamash on the twin-mountain Akkadian period (third-millenium BC), London, British Museum. ;(Right) Sun emerging from the twin-mountain from Egyptian Book of the Dead. Papyrus of Khensumose. 21st Dynasty. Vienna, Kunsthistorisches Museum

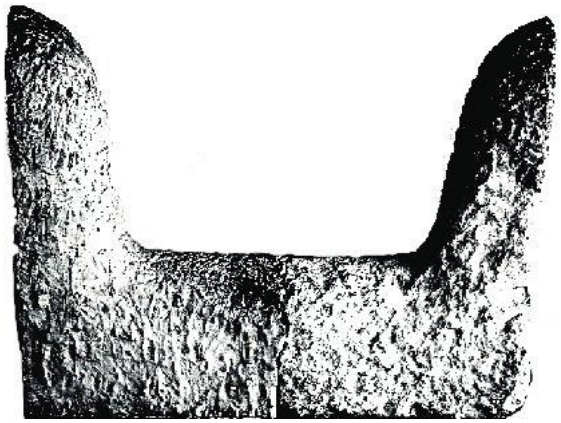


Figure 18. Similar symbolism may lie behind the Minoan 'horns of consecration'(Devereux 2013, p.10)

Although Vala and Vṛtra are male in the Vedas, behind the myth is the division of the world parents – as the appearance of Dānu in some hymns shows. This is not a Bronze Age myth of victory over non-IE populations who have stolen cows, but cosmogonic imagery.

2.31 The Hidden Sun

The myth of the release of water/light from the confines of the cave/monster is a very old and widespread myth. Witzel states it belongs to 'one of the stages after the emergence of heaven and earth' (2012, p.139) and thus forms part of the cosmogony – instanced from as diverse sources as the Biblical 'let there be light' to 'tribal ones that have the sun shut up in a box or somewhere underground.'

> 'The myth relates to the disappearance of the sun, or the deity of the sun, in a cave or some other enclosure and its reappearance (often as Dawn) after the intervention of a group of gods (and others), creating or restoring light and prosperity to the world.' (*ibid*, p.139)

He relates how in the Vedas the light of dawn (Uṣas) is regarded as a beautiful young woman, hidden in a cave on an island in the middle of the celestial river Rasā, accompanied by poets/singers named the Aṅgirases. These poets make a din outside the cave, and Indra smashes the lock with his lightning bolt releasing the dawn. In all respects (save for the figure of Uṣas in place of the 'dawn cows') the myth is the same as the Vala/Vṛtra and Saramā variants.

The release of Uṣas, Witzel states:

> 'brings with it not only life but also riches in the form of cattle, the reddish cows. These are identified with the reddish dawn and with ritual poetry, which, in the Ṛgvedic conception, holds this world together.' (*ibid*, p.140)

2.32 Uzume's Midwinter Dance

Witzel next discusses the Japanese myth of the sun-goddess Amaterasu ('she who shines from heaven'); Amaterasu hides in a cave (Iwayoto – 'stone door') in the cosmic river Ame.no Yasu-Kawa to escape the insults of her brother, Susa.no Wo, who, originally a god of the oceans, has climbed up to heaven. As the world is now dark and winter has descended the gods assemble at the bed of the heavenly river and decide to 'trick' the sun-goddess out of hiding: they begin to dance and sing outside the cave: a goddess named Uzume dances and exposes her genitals as she does so, and the gods shake with laughter until Amaterasu, out of curiosity, peeks her head round the door, whereon they hold up a mirror, and seeing what she believes is a (rival) goddess outside, she steps out allowing her to be seized by one god, Ta-jikara ("arm-strong"), while another locks the cave door shut with string behind her. (Witzel 2012, pp.140–1). Her release is explicitly linked with the return of the sun at the winter-solstice. The myth is first recorded c.712-20 AD, but Witzel argues it is unlikely to have been influenced by the Indra-Vala myth, which had all but disappeared from the strain of Buddhist tradition that had entered Japan c. 500 AD; instead, he suggests the myth arrived much earlier, possibly during IE expansions into what is now China in the Bronze Age, as he explains.

> "In both mythologies, there is a combination, on the one hand, of the myths of the daily return of the sun in the east, of its annual "return," at its rising point in the southeast at winter solstice, from a dangerous course into the darkness of winter, and on the other hand, of the primordial release of the sun from a cave, who is then set in motion by the gods in heaven, and again annually by humans on earth. Vedic India, with its stress on pastoralism and cattle subsistence, underlines the role of dawn(s) as cows, because 'cow' evokes many related images, while in Japan's proto-historical rice agriculture bovines did not play that great a role." (2005, pp.18–19)

The actions of Uzume recall the episode in the myth of Demeter when the goddess searches for her lost daughter Persephone who has been abducted in to the underworld resulting in winter; during her search the distraught mother is roused into laughter by the indecent act of an old woman named Baubo or Iambe:

> Baubo, having received Demeter as a guest, offers her a draught of wine and meal. She declines to take it, being unwilling to drink on account of her mourning. Baubo is deeply hurt, thinking she has been slighted, and thereupon uncovers her secret parts and exhibits them to the goddess. Demeter is pleased at the sight, and now at least receives the draught, — delighted by the spectacle! These are the secret mysteries of the Athenians! These are also the subjects of Orpheus' poems. I will quote you the very lines of Orpheus, in order that you may have the originator of the mysteries as witness of their shamelessness:
>
> "This said, she drew aside her robes, and showed a sight of shame; child Iacchus was there, and laughing, plunged his hand below her breasts. Then smiled the goddess, in her heart she smiled, and drank the draught from out the glancing cup." (Butterworth 1919)

A New Kingdom Egyptian variant emphasises the dance element, with the cow-goddess Hathor dancing erotically before the moribund sun-god Re to rouse him to new life after he declines in strength.

'Hathor, Lady of the Southern Sycamore, came and stood before her father, the Universal Lord, and she exposed her private parts before his very eyes, Thereupon the great god laughed.' (Simpson *et al* 2003, p.94)

2.33 A Milky Way Goddess?

Uzume's dance is performed on a bridge over the river of heaven, *Ame.no Yasu-Kawa* - the Milky Way, which she is later offered as a gift of thanks for helping release the sun; it is, then, in an astronomically-derived myth, with stellar as well as solar symbolism. The name Uzume means 'whirling heavenly woman', and given the connection between Tiamat, Nut, and Bóand to the Milky Way, it is possible that in 'whirling heavenly woman' we have an image of a female-formed Milky Way as in the Near Eastern parallels, turning about the earth's axis nightly, and so appearing to 'dance' in the heavens. This supports Witzel's hypothesis that the myth was derived from early IE incursions rather than later Buddhist traditions whose myths carried no such stellar/female imagery; inferring that the early IE myths depicted the Milky Way as, or at least connected it with, a 'dancing' female.

Less clear initially is any astronomical imagery present in the Greek Demeter myth – but on closer inspection there are similarities: Baubo's lewd dance occurs on the 'bridge of jests', just as the gods gather on the bridge over the celestial river in the Japanese myth wake the goddess with their laughter. The occurrence of bridges, lewd dances and laughter that prompts the release of an imprisoned goddess argues for both myths originating from a shared source. Moreover, Baubo is depicted as having a face on her belly (Fig 19) , with a mouth in place of a vulva – an image that seems bizarre until looked at in light of the Milky Way – for the region of the galaxy in which the sun is seen to set daily (the 'mouth' of Nut swallowing the sun) is the same region of the Milky Way in which it rises (birthed to from Nut's womb) the next morning – so that when represented visually the 'mouth' and 'womb' of the goddess are one location .Similar imagery will be discussed later concerning the origin and meaning of mouth/vulva – eyes/breasts imagery in Neolithic art (5.21).

Figure 19. Baubo, depicted in Greek art with a face on her belly from Priene, Anatolia

We are led to reconstruct an original IE myth, then, where the 'dance' of the Milky Way Goddess in the night sky presages the rising/release of the sun (goddess), who emerges on the horizon from her underworld prison, separating the nightly embrace of heaven and earth. The similarity of such a myth to Near Eastern motifs is obvious.

The myth of the release of the sun that lies behind the motif of the cattle-theft is a seasonal myth, not a myth of land-requisition; it is concerned with the return of the sun's power and of fertility, which might be associated with either the winter solstice if wholly solar (in the Amaterasu myth), or the coming of spring (the Demeter myth) if it represents the return of fertility and of the warmth of the sun; the Mesopotamian *Akitu* festival that marked the defeat of

Tiamat took place in the spring, as did the Puruli festival of the Hittites that was associated with the defeat of the Illuyanki serpent. In Egypt, however, the rebirth of the return of fertility was seen to occur around the time of the heliacal rising of Sirius which coincided with the Nile flood in the summer months c 2500–2000 BC. The timing and nature of such 'rebirth', then, being dependent on local geography and climate.

Having established a basic structure of the key motifs behind the cattle theft myth, and its provenance as a seasonal/cyclic repetition of the creative act, it is time to look at Celtic myth to see if this same set of symbols are present. This is important for two reasons – firstly it will show the wide dispersal of this (as we have argued, Neolithic) myth, and secondly it will show that this myth was known of, and recorded, in the geographical area of our study – the British Isles.

2.4 Celtic cattle-thefts

The corpus of Irish myth contains no less than 18 tales entitled '*Táin Bó*…' – 'cattle raid', the most famous of which is the *Táin Bó Cualigne* – 'The Cattle-raid of Cooley', which is atypical of the other Táin myths, being an account of the hero Cúchulainn's single-handed attempt to prevent the hosts of Queen Medb of Connacht from stealing a prize bull belonging to an Ulster chief. As such it concentrates more on the many duels between Cúchulainn and the Connacht warriors, while the actual (abortive) cattle theft tales place at the very end – abortive because the bull of Cualigne, Donn Bo (Brown cow) dies in killing a rival bull Finnbennach Ai ('White horn of Ai') of the Connacht men, an ending with cosmogonic overtones, however, as the bulls are dismembered becoming features in the landscape.

The *Táin Bó Fróech* ('Cattle raid of Fróech') presents a more typical example, detailing the exploits of Fróech, who is in possession of 12 white cows given to him by his aunt, the cow-goddess Bóand.

The tale consists of two variations on the theme of the rescue of cows/a female from oppression; in the first variant the cows are the dowry offered for Fróech's intended, Findabair ('white ghost/supernatural being'), offspring of Queen Medb ('mead'/intoxicated') and King Ailill, after Fróech slays a water monster (beheads it) to gain her hand - a plot repeated in the second variant where the his cows and wife and sons are taken by a second serpent whom Fróech defeats allowing their escape. Throughout, Findabair's father Ailill is intent to stop his daughter's marriage, a motif we will return to.

One immediately sees the similarity between this Irish myth and the Hindu tales, with Fróech playing the role of Indra defeating the serpent Vṛtra and rescuing Uṣas/cows; less obvious is the

theft motif found in the myth entitled 'The Second Battle of Moytura', which tells of the battle for the sovereignty of Ireland between the Tuatha Dé Danann and two demonic races, firstly the FirBolg ('Men of the Bag') and then the Fomorians ('from under the sea' (Rhys 1888), or 'demons' (Stokes 1891; Sjoestedt 1949).

This myth tells how the king of the Tuatha Dé Danann, Nuada, has his hand (or arm) cut off by Sreng the FirBolg. His wound means he no longer qualifies to be king, though eventually a silver hand is created for him. In his stead, Bres the beautiful is elected king, as his mother is of the Tuatha Dé Danann, but his father is Elatha, a king of the Fomorians, in the hope is his mixed parentage might cause a truce between the two warring races. But the first act of Bres is to yield tribute to his father's people. He builds a fortress and forces the gods to help in its construction. When Bres asks the Dagdae what he wishes to take in payment for his labour, he answers:

> 'I (charge) thee', saith he, 'to gather the cattle of Ireland into one place'. The king did this as the Dagdae said, and the Dagdae chose of them the heifer. That seemed weakness unto Bres: he thought that the Dagdae would have chosen somewhat more.

When the Tuatha Dé Danann complain about Bres' actions Bres flees Ireland, and seeks the fomorian champion Balor, who possesses a destructive 'baleful eye'; they rouse the fomorian host to assemble their ships and raid Ireland. *All the cattle of Ireland (save the cow taken as a reward by the Dagdae) are taken by the fomorians.*

Nuada resumes the kingship, but at this time a stranger appears in Tara; he is allowed entry because he possesses many skills, and Nuada abdicates in favour of the newcomer, whose name is Lug, and who like Bres is also part-fomorian, being the grandson of Balor. The Tuatha Dé Danann meet in counsel and decide to prepare for a war.

Lug sends the Dagdae to spy on the Fomorians and to delay them until the men of Ireland are ready for battle. He goes to the fomorian camp and they mock him by forcing him to eat a massive meal of porridge from a pit in the ground. He leaves the camp followed by the daughter of the Fomorian King Indech, and he takes her as a lover, and she promises to help him in the coming battle.

On the eve of the battle Lug asks each god what he will bring in terms of skill to the forthcoming battle; the greatest boon they possess is the well of Slaine, a well that offered healing and rebirth to those wounded or dead men placed within it, unless his head be severed. The fomorians send Ruadhan, Bres's son by the Dagdae's daughter Brígh, to spy on the Tuatha Dé Danann to see how they accomplished this miraculous healing, but he is discovered and killed, but not before the fomorians have discovered the secret; they send men to fill the well with stones to end its use. The battle commences, and many are slain, including Nuada – but at

its climax Lug faces his grandfather Balor. The latter had a destructive eye which was never opened except on a battlefield. Balor requests his eyelid be lifted, but at that moment Lug stands on one leg and closes one eye and casts a sling-stone at Balor whose eye is pushed backwards out of the back of his head, destroying his own army. With the death of Balor, the battle is won. At the same time the cattle of Ireland are rescued, summoned by the lowing of the old heifer given to the Dagdae for his labour.

In simplistic terms this tale contains, if a little obscured, an exposition of the cattle-theft myth: the cattle given as tribute to the demons are won back after the defeat of their monstrous leader, an act tied to the winning of sovereignty of the land. A later folktale called 'Balor on Tory Island' makes this even clearer. Here, Balor is a one-eyed giant destined to die on his grandson's wedding day, by a spear wielded by this same grandson – so he locks his daughter away on an island in the ocean hoping she will never fall pregnant. Balor's daughter, however, is impregnated by one Finn (or Cian), who journeys to the island to rescue a wondrous *cow that Balor has stolen*. The tale recounts how the child of the daughter is later rescued and how he, Lui Skilful-hand, kills his grandfather by piercing his eye with a spear (Gruffydd, W J 1928). Again, we see the link between cattle-theft and the winning of a female – with the attempt (like that of Ailill) to prevent such a union, meaning as it does the destruction of the father, for the father, like the serpent (of which he is an analogue) imprisons the daughter. Both themes, cattle/woman-rescue and defeat of the male who holds them, appear in another folktale with interesting astronomical symbolism - *Aided Chon Roi* - The Death of Cu Roi, (Best 1905; Stokes 1905)

This tale recounts how Cu Roi mac Dairi had aided the men of Ulster in a raid, but because he was not paid for his services he seized the plunder, namely a woman named Blathnat ('flowers'), the three cows of luchna (that could each produce the milk of 30 cows) and a cauldron.

The Ulster hero Cúchulainn, lover of Blathnat, pursues him. He meets with Blathnat and arranges a ruse by which Cu Roi can be killed and Blathnat, her cows and her cauldron rescued. Blathnat advises Cu Roi that he should build an enclosure for his stronghold of *standing-stones*, accordingly he sends his men away to fetch building materials leaving his stronghold undefended. Blathnat has agreed that when Cu Roi is most vulnerable she will send a signal to Cúchulainn by *pouring the milk of her magical cows down the river* (henceforward named "Finnglas (White Flecked).") that runs through the stronghold. Blathnat bathes Cu Roi and binds his hair to his bedpost, then pours the milk and opens the stronghold doors. Cúchulainn enters, cuts off Cu Roi's head, and so regains the spoils lost to Cu Roi.

2.41 The River of Milk

Cu Roi's fort is described in the tale 'Bricriu's Feast' thus:

> 'In what part of the globe whatsoever Cu Roi should happen to be, every night o'er the fort, he chanted a spell, till the fort revolved as swiftly as a mill-stone. The entrance was never to be found after sunset.' (trans. Cross 1936)

The turning fort moves in a manner suggestive of the sky revolving around the pole. The inability to find its entrance after sunset suggests it is marked by the rising or setting point of the sun (something not visible after nightfall); accordingly, the fort can only be entered when the sun has marked the point of entry/exit, when the right conjunction has taken place between it and the heavens. The same imagery is apparent in Egyptian tradition where the sun can only enter the body of Nut at sunset on the horizon. But what the *Aided Chon Roi* shows is that the spinning 'fort' has a river running through it, and that this river is associated with the milk of the stolen cows. By extension, if the fort is the turning sky, or a site associated with the sky (the tale itself suggests it is constructed of standing stones), then the river of milk running through it is the Milky Way. The same imagery appears in the Welsh *Culhwch ac Olwen*, that concerns the rescue of the heroine Olwen from her one-eyed giant father Yspaddaden, who will be beheaded at her wedding; her name means 'white track', and this is said in the tale to be because white trefoils spring up where she treads - but the white path is a visual trope; it is arguably the same as the river of milk, an analogue of the Milky Way; similarly the name Findabair in the Fróech myth – 'white phantom/ghost' seems to be a visual reference. The appearance of the Milky Way, these myths are saying, like the dancing of Uzume or the jests of Baubo, precedes the beheading of the imprisoning foe (Yspaddaden/Cu Roi) and the rising/release of the sun/daughter.

Yet if the female is related to the Milky Way and the released sun, has the hero of the tale an astronomical analogue?

2.42 The Demon's Daughter

The Second Battle of Moytura relates how on the eve of battle the Dagdae enters the Fomorian camp and is forced to eat a huge amount of porridge from a hole in the ground:

> into which went four-score gallons of new milk and the like quantity of meal and fat. Goats and sheep and swine are put into it, and they are all boiled together with the porridge. Indech told him that he would be put to death unless he consumed it all; he should eat his fill so that he might not reproach the Fomorians with inhospitality. (*trans* Stokes 1891, p.87)

The Dagda finishes the meal, scraping the last vestiges from the pit with his fingers, then exits the camp.

> “Not easy was it for the hero to move along owing to the bigness of his belly. Unseemly was his apparel. A cape to the hollow of his two elbows. A dun tunic around him, as far as the swelling of his rump. It is, moreover, long-breasted, with a hole in the peak. Two brogues on him of horse-hide, with the hair outside. A wheeled fork to carry his club which required the effort of eight men, behind him so that its track after him was enough for the boundary-ditch of a province. Wherefore it is called The Track of the Dagdae's Club.” (*ibid*, p.87)

The Dagdae is pursued by Indech’s daughter; he desires her, but his immense meal has made him impotent

> “The girl began to mock him, then she began wrestling with him. She hurled him so that he sank to the hollow of his rump in the ground. He looked at her angrily and asked, "What business did you have, girl, heaving me out of my right way?"
>
> "This business: to get you to carry me on your back to my father's house."
>
> "Who is your father?" he asked.
>
> "I am the daughter of Indech, son of De Domnann," she said.
>
> Then he moved out of the hole, after letting go the contents of his belly, and the girl had waited for that for a long time. He got up then, and took the girl on his back; and he put three stones in his belt. Each stone fell from it in turn-and it has been said that they were his testicles which fell from it. The girl jumped on him and struck him across the rump, and her curly pubic hair was revealed. Then the Dagda gained a mistress, and they made love. The mark remains at Beltraw Strand where they came together.
>
> Then the girl said to him, "You will not go to the battle by any means."
>
> "Certainly I will go," said the Dagda.
>
> "You will not go," said the woman, "because I will be a stone at the mouth of every ford you will cross."
>
> "That will be true," said the Dagda, "but you will not keep me from it. I will tread heavily on every stone, and the trace of my heel will remain on every stone forever."
>
> "You will not go past me until I summon the sons of Tethra from the sid-mounds, because I will be a giant oak in every ford and in every pass you will cross."
>
> "I will indeed go past," said the Dagda, "and the mark of my axe will remain in every oak forever." (And people have remarked upon the mark of the Dagda's axe.)
>
> Then, however, she said, "Allow the Fomoire to enter the land, because the men of Ireland have all come together in one place." She said that she would hinder the Fomoire, and she would sing spells against them, and she would practice the deadly art of the wand against them--and she alone would take on a ninth part of the host.” (*ibid*, p.88)

Indech’s daughter is playing the same role as Findabair and Olwen, that of the giant or demon’s daughter who aids the hero in his quest; it is a role played by Gaia in helping her son Kronos to defeat her husband Ouranos. The demon’s daughter represents the sun or fertile waters in need of rescue, of transformation from a static to an active state. The Dagdae’s solsticial mating with the white cow Bóand was discussed earlier in this thesis and Bóand’s connection to the

formation of rivers; the liaison with Indech's daughter is also is an example of such a union, after which she has asked him to 'carry' her on his back – a motif to which we will return.

Of interest here are the three stones the Dagdae places in his belt; the tale relates that they were his testicles; but what might be the meaning of such an odd statement? There are two possible, and not necessarily exclusive, interpretations - the first of which is that it is to be read as a farming metaphor.

2.43 Farming metaphors

The actions of the Dagdae mimic the process of cereal farming. Having robbed the 'porridge' from the demons (the eating of the porridge is a kind of 'soma-theft', a variant of the cattle-theft), the Dagdae drags his 'club' along the ground, (making a furrow?); next, he fills the furrow with his excrement (manuring the land); then his (seed-bearing) testicles/stones fall from his belt, like a sower casting seed from a pouch at his waist. At this point the Dagdae mates with Indech's daughter; a seeming act of sympathetic magic, echoing of the phallic plough entering 'Mother Earth' and the sowing of the seed.

There is also a suggestion in this meeting of the clearing of the virgin forest by the axe: Indech's daughter, in her initial hostile state, says:

> I will be a giant oak in every ford and in every pass you will cross."
>
> "I will indeed go past," said the Dagdae, "and the mark of my axe will remain in every oak forever."

The Dagdae has cleared the land and planted a field with his seed. He has tamed chaos, overcome the entropic forces, and brought life into the world. There are hints of a similar scenario in related myths, such as that of *Culhwch ac Olwen* where the young Culhwch must perform several impossible tasks, the first of which, as Yspaddaden says, concerns:

> The great thicket yonder. I must have it uprooted out of the earth and burnt on the face of the ground so that the cinders and ashes thereof be its manure; and that it be ploughed and sown so that it be ripe in the morning against the drying of the dew, in order that it may be made into meat and drink for thy wedding. (trans. Jones & Jones 1949, p.113)

Burl has suggested the rites practised in the henges were fertility rites, making the land fertile through sympathetic magic (1979, pp.221–223); the myth of the Dagdae seems to include such fertility-magic elements. What's more, the Dagdae's acts provide a possible context for the chalk balls found in Neolithic sites (dropped from Dagdae's belt) as well as the faunal remains found in ditches and pits which offer similarities to the pit full of meaty 'porridge' from which the Dagdae eats (see 2.42).

Yet there is more to these three stones than supernumerary testicles: their number becomes explicable if seen as derived from astronomical imagery, an identification that rests on a closer analysis of the figure of the sun-rescuer in I-E myth.

2.5 The impeller

Returning to the storm god who separates the World Parents and thus brings about the release of the sun in Near Eastern myth, the Egyptian Shu, the creative principle that 'divides the waters', lifts the Milky Way in the form of the sky-cow Nut, and who fetches the lost cow-goddess (whose eye was the solar disc) from exile, utters the following in Spell 80 of the Coffin Texts (First Intermediary Period):

'My clothing is the breath of life which

issued after me from the mouth of Atum

It is I who make the sky lighten after darkness…

My strides encompass the length of the sky.' (Faulkner 1978, p.80)

He is associated with Anhur/Onuris, the hunter, who slays the chaos dragon Apophis. (Török 2002, p.151).

A similar figure is that of Sahu, a figure later syncretised with Osiris, and identified with Orion in Egypt. He is depicted on the Dendera zodiac as a man striding across the sky leading the bright star Sirius, here depicted as a cow – the goddess Sopdet (Fig 20). His name is the same hieroglyph as 'toe'  suggesting the leading foot of the constellation, Rigel (Fig 22).

Figure 20. Sahu/Orion depicted on the temple of Dendera, fourth century BC

The star Sirius at the head of the cow might be interpreted as its eye – thus the constellation of Orion leads the eye/cow (Sirius) just as Shu/Anhur rescue the goddess Tefnut, or the eye of Ra (the sun) being the cow-goddess (Tyldesley 2011, p.49). Both myths offer a similar image – in one Orion rescues the star Sirius, associated with a cow, after its 70 days disappearance prior to the summer solstice, and another a striding figure located in the sky rescues the eye of the cow, the sun, from winter. They are equivalents, and suggest the figure of Shu has similarities to Sahu/Orion; the Pyramid texts suggest the soul, like Sirius or the sun, will be born again in the sky with Orion after being taken back in to the womb of Nut:

> 'Behold he has become Orion, behold Osiris has come as Orion…O King, the sky conceives you with Orion, the dawn-light bears you with Orion… You will regularly ascend with Orion from the eastern region of the sky, you will descend regularly with Orion into the western region of the sky, your third is Sothis [Sirius] pure of thrones, and it is she who will guide you both on the goodly roads which are in the sky in the Field of Rushes.' (820-1) (Faulkner 1969, pp.147–8)

In this act the soul is carried by Sahu/Orion as Sahu/Orion carries the newly risen Horus: 'He voyages to heaven with his son Horus at his side (*lit. at his fingers*), that he may nurture him and cause him to appear in glory as a great god in heaven' (Griffiths 1980, p.15) the image of Horus here suggesting the sun-disk in the outstretched hands of Orion, the place where Shu is depicted touching Nut's womb, birthplace of the sun. The image of the ascended soul of the King in Utterance 576 of the Pyramid texts recalls the stance of Orion and Shu:

> 'O Nu, raise the King's arm to the sky that he may support the earth which he has given to you. He will indeed ascend and rise to the sky, he will act as escort to Re, (even) Horus at the head of the Spirits.' (Faulkner 1969, p.232)

A similar figure is the Hindu Savitṛ. Savitṛ, the 'driver', 'impeller' or 'goader', is associated with the transport of the sun across the heavens – especially its rising and setting; he is sometimes described as a sun god, a variant of Sūryā, but Doniger O'Flaherty refers to him as the 'divine obstetrician…called to assist the…birth of the sun.' (1981, p.82) He assists Indra in creating the cosmos (Mackenzie 1913, p.10) and there are examples of Indra himself being called Savitṛ, suggesting that in origin Savitṛ was an aspect of Indra that was later given separate form; later still is his merging with Sūryā, the sun, as in the hymns of the Ṛgveda he is clearly described as its father (RV 10.85). His appearance is more that of Shu or sun-rescuer than as the sun, as the following makes clear:

> Rigveda 2.38
>
> 2. So that all will obey him, the god with broad hands stands upright, and stretches out his two arms before him. Even the waters obey his command; even the wind stops in its orbit.
>
> 4. He stirs and stands up; he has set apart the different times. (Doniger O'Flaherty 1981, p.196)

He is visualised then as a standing figure, with arms stretched out like Shu, commanding the waters. Another hymn (1.35) tells us more:

1. I call on the god Savitṛ for aid

3. The god goes forward; he goes upward…the God Savitṛ comes from the far distance, driving away all evils

4. Where is the sun now? Who knows? To what sky has his ray stretched?

8. He has looked upon the eight peaks of the earth, and on the three plains a league wide, and the seven rivers. The golden-eyed Savitṛ has come, bringing the worshipper the treasure that he longs for.

9. Golden-handed Savitṛ moves busily between the two, between sky and earth. He drives away disease *and bids the sun approach*; he reaches the sky through the dark dust.

10. Let the merciful and helpful Asura, the good leader with golden hands, come towards us. Routing the demons and sorcerers, the god to whom we sing has taken his place against the evening.

11. On your ancient paths, Savitṛ, that are dustless and well made in the middle realm of space, on those paths that are good to go on come to us today, and protect us, and speak a blessing on us, O god. (*ibid*, p.198 *my italics*)

He is not the sun, for the hymn states that Savitṛ is present but the sun is not (verse 4) and that he bids the sun approach (verse 9). Savitṛ strides the heavens, through the middle space between earth and sky. The Yajur Veda states that this 'router of demons' is also responsible for binding a demon, Araru, to the sky:

h. O god Savitṛ, bind thou in the furthest distance with a hundred fetters him that hateth us and whom we hate, thence let him not be free.

i. Araru is smitten away from the earth, the place of sacrifice.

K. Go to the fold where the cattle are.

L. may heaven rain for thee.

Let the Vasus grasp three with the Gayatri metre, let the Rudras grasp thee with the Tristubb metre, let the adityas grasp thee with the Jagati metre…

x. Before the cruel foe slips away, O glorious one.'

(The Yajur Veda/Kanda I; 1.1.9 *trans* Keith 1914, p.12)

That Araru is also the heavenly river (Milky Way) we see from a line in the Ṛgveda, where the Jagati metre, a poetic utterance, is used to fetter the river in the sky:

RV 1.164 25. With the Jagat he fixed the stream in the sky. (Doniger O'Flaherty 1981, p.78)

Savitṛ is performing the role of Shu or Marduk fashioning the Milky Way from the body of Tiamat that he has fixed in the sky, and journeying to the 'fold where the cattle are'.

Aiyangar states that Savitṛ:

> '… is described in the garb of Sūryā, the sun. I say in the garb, because Savitṛi is not merely the sun, he is the invisible creator conceived in the figure of the vivifying, animating, exciting sun.'(1898, p.262)

Although his identification of the god with the sun disk is questionable, what he goes on to say is of great interest:

> It is when the sun comes *in conjunction with Orion*… or Savitṛ that he becomes the summer sun; it is only then and not in winter that the sun can be called Savitṛ – creator.' (*ibid*, p.262 *my italics*)

Logically, if the epithet Savitṛ is only applicable when the sun is in Orion, and the sun is not Savitṛ, the epithet 'impeller' *belongs to the constellation of Orion*.

Another hymn from the Ṛgveda tells of Savitṛ striding across the heavens, leading the cow and her calf (the dawn and the sun); he is described as the son of the goddess Aditi '- 'without bounds', who was considered a sky goddess (Ṛgveda, i. 89, 10) and is described as a milch-cow (CLIII; 3)(Walker, 1968, 2). Aditi is called *Devamata* – 'mother of gods; and is the divine matrix from which the gods are created, a quality shared with both Nut and Tiamat. She is often depicted with legs open and knees raised, a posture called Uttānapad (Doniger O'Flaherty 1981, p.39) suggesting either birth or sexual openness – but which has obvious analogues to the sexual displays of Baubo and Uzume, which together with her sky and cow aspects suggest a possible Milky Way connection (Fig 21).

The Ṛgveda says of her: '…the quarters of the sky were born from her who crouched with legs spread.' 10.72. (*ibid*, p.40)

And in this posture she births the sun, drawing it forth from the ocean where it has been hidden.

Figure 21. Aditi depicted in erotic/life-giving stance (source: Kramrisch 1956)

The imagery surrounding Shu, Savitṛ, and Indra is consistent: a striding, upright male with outstretched hand(s) holding the river of the sky in place; Celtic analogues suggest similar qualities: Lug is 'long armed', his predecessor Nuada is 'airgetlam' – 'silver handed', and the club-wielding Dagdae has three stones in his belt. Such qualities, considering the association between Savitṛ and Orion, are applicable to this constellation: Orion (Fig 22), known as 'The Hunter' is interpreted widely in European and Near Eastern tradition as a striding human figure; his three belt stars are his most prominent feature, and he is often depicted with a raised club or with a bow and arrow; he stands immediately beneath the Milky Way, so that his raised hand enters the galaxy (silvering his long arm?). Likewise, the figure depicted on the Gallehus drinking horns with the tricephal is a striding figure holding a bow and arrow, with three stars above him. These stars might be suggestive of Orion's belt, or at least suggests a stellar aspect to the myth.

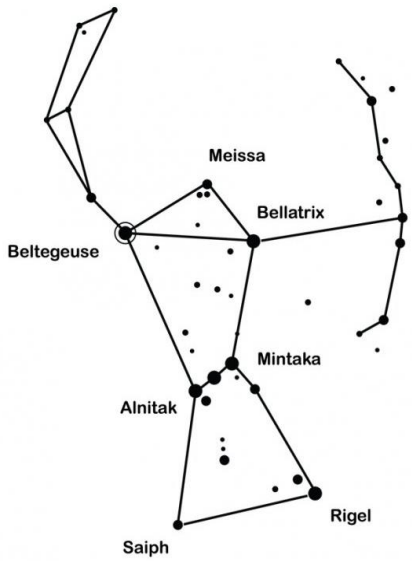


Figure 22. The constellation of Orion

Nuada is an Irish reflex of a British god Nodons, who had a Romano-British healing shrine at Lydney Park in Gloucestershire and is associated with statuettes of hunting hounds. Nodons means 'hunter' (Tolkien 1932) thus equating him with Orion who is accompanied by his dog, Sirius. Nuada's silver hand, an earlier version of Lug's 'long arm' suggests that of Orion that extends in to the Milky Way. His hand, then, is arguably 'silvered' with stars. Savitṛ follows the same pattern: Bhattacharji explains that:

> 'The Mahabharata and the Purānas make Savitṛ *one-handed*… The Kaushitaki Brahmana has the earliest version of the tale: When the gods performed the sacrifice, they kept Brahman's portion for Savitṛ, it cleft his two hands, to him they gave instead two golden ones.' (1970; p.214 *my italics*)

There is not room to discuss the wounded hand here, we should note, however, that the Germanic sky god Tiwaz/Tyr is also recorded in the Eddas as wounded in the hand while binding the wolf Fenris, just as the other sun-rescuers bind the monster in the sky (Faulkes 1995, pp.24–25).

The heavenly location of this imagery is clarified in the hymns of the Ṛgveda - the cow that Savitṛ leads, like Auđumbla, lets flow her milk to the corners of the sky in a cosmogonic act:

> 1.164.
>
> 17. Beneath what is above, and above what is beneath, the cow went upward, holding her calf by the foot. In what direction and to what half of the sky has she gone away?
>
> 26. I call to the cow who is easy to milk, so that the milker with clever hands may milk her. Let Savitṛ inspire us with the finest vigour. The pot of milk is set on the fire – this is what I would happily proclaim.
>
> 41. The buffalo-cow lowed as she fashioned the flowing waters…
>
> 42. The quarters of the sky live on the oceans that flow out of her in all directions. The whole universe exists from the undying syllable that flows from her. (Doniger O'Flaherty 1981, pp.77–80)

Doniger says of the pot of milk:

> The milk hissing in the pot is the dawn cow snuffling at her calf, the sun; the milk that swells in her udder is the milk that boils; the pot sings a chant, and the cow (the milk) throws off her cover (her lid), as the milk boils over. (*ibid*, p.82)

It is a creative ritual act - the pot boils over and the milk spills into the sky as the light of dawn. Norman Brown explains the image further:

> 'Stanzas 26-30 report a celebration of the pravargya rite, possibly that which the gods celebrated *to cause the birth of the Sun*… The pravargya rite is celebrated at dawn but the details are uncertain. An earthenware pot is heated and fresh milk is poured into it as it sits over a fire. The milk boils up and runs over on the fire. The rite operates by sympathetic magic to bring the dawn and sunrise. Dawn, called a cow, is represented by the milk. The ceremony causes the Dawn to emerge from her place of concealment and swell up. *Savitṛ*,

> *the divine obstetrician, is besought to render his services.* The pot seems to represent the place below the horizon where Dawn is confined. The milk as it overflows on the fire appears to be a symbol of the newborn sun...When the swelling milk pushes off the lid of the pot, for which the word is *vavr* we have an echo of Indra destroying Vṛtra 'the covering', both words being derivatives of *vṛ*.' (1978, p.69 *my italics*)

One recalls the folktale attached to the building of Silbury hill, a site etymologically linked to the sun (through a P-IE **Sawol* - 'sun' that yields both Swallowhead, the name of the spring near Silbury, and Sil itself, a derivative of **Sawol* evidenced in the Old Irish *Suil* – sun/eye); Aubrey records in his *Monumenta Britannica* that the hill was raised in the time it *took a posset of milk to boil.* The story has been quoted in books on Silbury with a kind of quaint amusement; yet this Vedic image should make us reconsider.

Returning to Orion, the classical myth associated with the constellation shows obvious connections to the role of the 'impeller'.

2.51 Orion

In Greek myth Orion is the son of the sea-god Poseidon, (other versions have him born from a leather sack made from a cow-hide that the gods have ejaculated or urinated in); he is a giant, able to walk across the oceans; on one occasion, he walks to the isle of Chios where he falls in love with Merope daughter of King Oenopion who agrees to allow the pair to wed if Orion clears the island of all wild animals. Orion does so but Oenopion refuses to give his daughter away. At a drunken feast Orion attempts to assault Menope; for this 'assault' the irate father blinds him. Orion is said to have carried Kedalion, the servant of the lame-god Hephaiston, on his shoulders after he is blinded as a guide; Kedalion helps Orion by guiding him east (he strides across the Aegean Sea) where the sun god Helios heals his sight with the light of the rising sun. Orion falls in love with Helios' sister Eos, dawn, but is later killed by a scorpion sent by the goddess Artemis while he hunts with her on Crete (Evelyn White 1914)

The derivation of Orion from Ourein, explained as the comic image of the gods urinating in to the leather sack (Kerenyi 1976, pp.42), is better explained as 'bringer/releaser of water', putting us in mind of the feats of Indra. The attempted abduction of Merope, daughter of Oenopion ('rich in wine') mirrors the 'stealing' of Findabair, daughter of Medb ('mead'), from out of the hands of a reluctant father, and the rescue of Olwen from the clutches of her father Yspaddaden, who forces Culhwch to perform several 'impossible tasks' (many linked to farming and land clearance) just as Orion must clear Chios of beasts.

2.52 The Wounded eye as solar symbol

The restoration of his sight in the east, read astronomically, suggests an image based on the return/rescue of the sun in the east at dawn or after the winter ending the 'blindness' of night. In the Second Battle of Moytura points out Lug defeats Balor 'of the baleful eye' when standing on one leg, *with one eye closed* (Lug, Nuada and the Dagda all play a similar role in the Moytura myth, which is arguably a composite of differing versions of the same theme). The defeat of Balor suggests further astronomical analogues: the weapon used by Lug a sling-shot (i.e. is circular), and its casting towards Balor suggests the sun (or moon) moving about the ecliptic from Orion's 'long' hand, which reaches out towards the crossing point of the ecliptic (the path traversed by the sun, moon and planets) and the Milky Way to the opposing constellation of Scorpio, which guards another such 'crossing point'. Within Scorpio is the red star Antares (said to be the heart of the scorpion) so named because it 'rivals' Mars (Ares). Scorpio sits on the opposite side of the sky from Orion and the wounding of Orion by the scorpion in myth reflects the observation that one constellation rises as the other sets (and vice versa), and that in the Classical era when the sun rose in Orion (at the feet of Gemini) it was summer and in Scorpio, winter (Aratos; Phaenomena 636). As stated above, both also constellations mark opposite 'ends' of the Milky Way, the places where the ecliptic and the galactic plane cross, often depicted as 'gateways'.

The Mesopotamian Gilgamesh passes through such a gateway in his journey to the underworld:

ii. He reached the mountains of Mashu

Which daily guards the coming out [of Shamash] –

Their upper parts [touch(?)] the sky's foundation

Below, their breasts reach Arallu.

They guard its gate, the Scorpion-men

Whose aura is frightful, and whose glance is death

Their terrifying mantles of radiance drape the mountains.

They guard the sun at dawn and dusk –

(Dalley 2008, p.96)

Gilgamesh enters the abyss by following the path of the sun in Scorpio, as Cúchulainn in *Aided Chon Roi* enters the stronghold at a specific point marked by the sun and the 'river of milk'.

Such an image is recorded by Macrobius in the 5th century AD:

Macrobius, Saturnalia 1.12:

> 1. At this point we shall discuss the order of the steps by which the soul descends from the sky to the infernal regions of this life. The Milky Way girdles the zodiac, its great circle meeting it obliquely so that it crosses it at the two tropical signs, Capricorn and Cancer. Natural philosophers named these the "portals of the sun" because the solstices lie athwart the sun's path on either side, checking farther progress and causing it to retrace its course across the belt beyond whose limits it never trespasses.
>
> 2. Souls are believed to pass through these portals when going from the sky to the earth and returning from the earth to the sky. For this reason, one is called the portal of men and the other the portal of gods: Cancer, the portal of men, because through it descent is made to the infernal regions; Capricorn, the portal of gods, because through it souls return to their rightful abode of immortality, to be reckoned among the gods.
>
> 3. This is what Homer with his divine intelligence signifies in his description of the cave at Ithaca. Pythagoras also thinks that the infernal regions of Dis begin with the Milky Way, and extend downwards, because souls falling away from it seem to have withdrawn from the heavens. (Commentary on the Dream of Scipio, *trans* Stahl 1955, pp. 132–5)

Here the references to Capricorn and Cancer represent the solsticial positions when Macrobius was writing. Mann has pointed out that this description is not without its issues and inconsistencies, but that fundamentally Macrobius is (mis-)presenting an older tradition concerning the Milky Way as a road of souls (to the upper or lower worlds) the 'doorways' to which are the place where the galaxy and ecliptic meet (2011, p.204). This is something that will be of extreme importance when the orientation of the entrances of henges are examined in Part Two.

Returning to the theme, the classical myth suggests that the sun is in Scorpio at winter (when Orion is 'blind') whereas Orion regains the sun (and his sight) in the summer. This, of course, depends on the era – the shifting of the constellations over time due to the phenomena of precession (the change in the orientation of the earth's axis over time) means that such stellar patterns are not fixed indelibly, so that the association of the rising of Orion with the coming of summer is only true at certain times in history ('seen to' being the wrong turn of phrase, as of the constellation that rises with the sun, which 'houses' it, cannot be seen because of the sun's glare – unless there is a solar eclipse) (Ruggles 1999, p.57). This shifting of constellations causes some problems in decoding 'astronomic' myths but can also suggests in what era of the 25,920-year precessional cycle those myths arose.

The arguably serpentine shape of the constellation of Scorpio that led Spenser to write of 'Orion flying fast from hissing snake' (Allen 1889) might suggest that this war between these summer and winter constellations may have formed part of the IE *Trito and *Nghi imagery: the constellation of Scorpio could easily be interpreted as a serpent with three heads, and one central, red, baleful eye (Fig 23); thus, the Orion vs Scorpion myth may have developed from an original concerning the hero vs serpent (*Trito vs *Nghi).

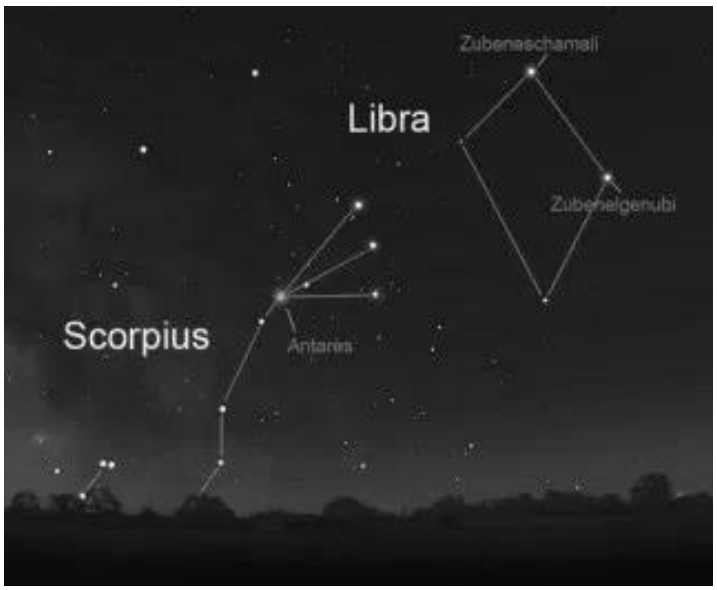


Figure 23. The constellation of Scorpio can be interpreted as tricephallic serpentine form

Returning to the myth in hand, Lug's closing of an eye when he defeats Balor does have similarities to Orion's blinding. The connection between blinding and release of water is made clear in Bóand's loss of an eye in the release of the Boyne River. This loss of an eye in the Orion myth is clearly solar – he is blinded yet receives his sight back from Helios as the latter rises in the east. Such an image is perhaps echoed in the killing of Baldr by the blind god Hodr in Norse mythology, or the slaying of St Alban by a soldier whose eyes fall out as he martyrs the saint (a spring wells up from where Alban's head hits the ground in a clear cosmogonic image). An identical image occurs in the Hittite myth of Illuyanki, who takes the eyes and heart of the storm-god – yet these are returned to him when the storm-god's son marries the dragon's daughter (aid of the demon's daughter motif) and with his sight restored the storm god is now able to kill the dragon and release the waters; likewise the god Horus, later syncretised with the solar Re, loses an eye while fighting Seth, though later Horus regains his eye and returns it to Osiris where it acts as a talisman protecting him from Seth (Griffiths 1960, p.4), an act that mirrors verses in the Old Kingdom Pyramid texts that deal with the resurrection of the dead King through placing the Eye of Horus in his mouth (Faulkner 1969, p.10). It is proposed, then, that Orion is 'blinded' because the constellation 'loses' the sun (to Scorpio) before he regains it is a 'sun-bearer' in the spring. The restoration of sight, then, is really the restoration of the solar disc after winter and is suggested in the imagery of carrying Kedalion on his shoulders, just as Indech's daughter insists the Dagdae carry her on his back. Both are derived from the sun-rescue.

2.53 Sun-bearer

The path of the ecliptic passes above the shoulder of Orion, just above his up-stretched hand, so that at certain times of the year (depending on the epoch) when the sun is between Gemini and Taurus, it seems to sit on his shoulder or his outstretched hand (Fig 24).

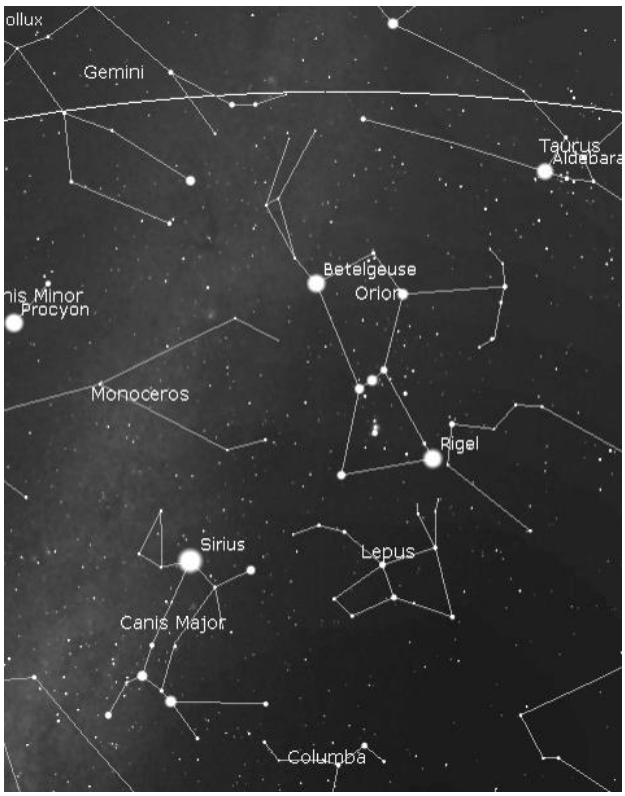


Figure 24. The ecliptic crosses the Milky Way above the raised hand of Orion

In hagiography, the image of Orion carrying a figure on his shoulders finds a parallel in the image of St. Christopher crossing a stream bearing Christ. Yet the IE myths suggest the 'stream' St. Christopher wades across, or the sea crossed by Orion, is heavenly. A similar image exists of Krishna being carried across the Yamuna River (the riparian form of the 'lost' twin goddess Yamī, honoured by the pouring of milk into the river) in a basket on the back of his father Vasudeva. Germanic legends similarly tell of a giant named Wade/Waetla who 'wades' across the icy waters of the Grœnasund to bring his son Wayland back (on his shoulder) from the mountain of the dwarves, where he has been learning to smithy. The parallels to the constellation (and the mythical) Orion are clear: Wayland is the lame smith of the gods, and it is the servant of the lame-smith Hephaestus, Kedalion, whom Orion carries. Although the myth of Wayland seems to be terrestrial, citing a Scandinavian location of the wading, this can be challenged as there are clear links between Wade, his children and the Milky Way.

Watling Street, the Roman Road from Dover/Richborough to Holyhead, Jacob Grimm argued, was named after the 'children of Wade' (or 'Waetla') – that is 'Waetla-ingas strete' (1882,

pp.356–7). A similar name appears in Wade's causeway, a stretch of Roman road in Yorkshire. The legend surrounding it says that it was built by the giant Wade and his equally giant wife Bell, and that she carried stones in her apron for the building of this track whose purpose was to help Wade take his *cow* to market. But the earliest reference (Charlton in his *History of Whitby* (York 1779, p. 40) quoted in Davidson 1958. P.150) talks of 'Bell Wade's cow', and Hilda Elis Davidson argued that the track was built by Wade for this magical cow, not his wife (1958, pp.150–151) (but both might be inferred if the tale is based on our reconstructed P-IE cosmogony). The point in mentioning these roads named after Wade and his offspring is that Chaucer states in 'The House of Fame' that Watling Street was the name given to the Milky Way:

> Now, quod he thoo, cast up thine eye, See yonder, lo, he galoxie, Which men clepeth the milky weye, For hit is white; and some, parfaye (by my faith), callen hyt Watlyng strete' (book II, line 935) (quoted in Drayton 1995)

However, Tolkien (1924) suggests that Watling Street was the name of the Milky Way *before* it was applied to the awe-inspiring Roman roads the Anglo-Saxons encountered on coming to England, which they named after the 'street' in the heavens. This suggests firstly, that Wade was responsible for leading the cow across the heavens, and that the Milky Way is the track of milk, or river of milk, left by the dawn-cow as she travelled: it is the cattle-theft again - recalling Savitṛ/Shu leading the solar cow from captivity, suggesting that the image of Wade bearing Wayland on his shoulders is astronomical.

When did the Orion myths arise? This is not straightforward to answer - Orion is a large constellation and it is difficult to define the exact 'point' of a correlation. Orion lies south of the ecliptic, so apart from his outstretched hand, the sun does not cross the figure – but the sun being carried is not the only, or necessarily the earliest, 'match'. The Greek Orion is the mate of Eos 'dawn', suggesting he was sighted in the dawn sky; the rescue of the cows/sun at dawn, similarly suggesting the sun is rising *after* Orion who leads the cows. Sellers argued the heliacal rise of the belt stars of Orion may have been important in pre-Dynastic Egypt, which suggests the same imagery (Sellers 1992, pp.10,20)

The image of Orion *carrying* the sun develops later when precession moves the constellations against which the spring sunrise occurs further along the ecliptic past Gemini (Orion's hand is at the feet of Gemini), into Taurus (in the modern day it rises in the spring in Pisces). Such would have rendered Orion's role as herald of the spring dawn defunct, as he would have risen *after* the sun in the spring, having risen *with* the sun earlier in the year.

2.54 Orvandel's Toe

The loss of this role is suggested in the Icelandic poem Skáldskaparmál that tells how the god Thunor seeks the removal of a flint-stone stuck in his head after a fight; Thunor journeys to Groa, the wife of Orvandel the Bold, who alone can remove the stone:

> She sang her magic songs over Thor until the flint-stone became loose. But when Thor perceived this, and was just expecting that the flint-stone would disappear, he desired to reward Groa for her healing, and make her heart glad. So he related to her how he had waded from the north over the Elivogs rivers, and had borne in a basket on his back Orvandel from Jotunheim; and in evidence of this he told her how that one toe of his had protruded from the basket and had frozen, wherefore Thor had broken it off and cast it up into the sky, and made of it the star which is called Orvandel's toe. Finally, he added that it would not be long before Orvandel would come home. But Groa became so glad that she forgot her magic songs, and so the flint-stone became no looser than it was, and it sticks fast in Thor's head yet. (Anderson 1879, pp.173–4).

Orvandel is associated with dawn, stemming from the Proto-Germanic**auzi-wandilaz* - 'dawn-wanderer'. Yet the legend here seems to be confusing the issue. Orvandel's toe is usually associated with Venus as the morning star, which appears in Old English lore as Earendel:

> Oh Earendel, brightest of angels,
>
> over middle-earth to men sent,
>
> and of the true sun's radiance
>
> radiant above the stars…
>
> (Cynewulf's Crist I, lines 104–107, *trans* Lee and Solpova 2016, p.117)

Yet the name of the star in Skáldskaparmál is not Orvandel, but Orvandel's *toe*. Why so? Why would Venus lose a toe? A more likely candidate for the toe is Sirius, which lies close to *Saiph*, the left-foot of Orion; this appears to have become disconnected from the main figure, hence the toe falling off the foot of the *giant* after he had crossed the icy waters (like Wade) of the Milky Way – i.e. it is Thunor/Orion's toe that froze (after all, it was he that was wading through ice). This connection of toe with Orion finds support in the Egyptian name of constellation - Sahu, 'toe'. The image of the toe sticking out of the basket seems to be a secondary invention. But if this is so then it suggests that the name Orvandel was originally applied to the giant; 'Dawn-wanderer' is an apt name for Orion, the sun-rescuer. It is originally the sun he carries in the basket on his shoulders. The Norse tale, then, suggests that by the time the Norse poet was writing down the tale (in the 10th century AD) the name/role of Orvandel as the herald of the reborn post-winter sun (a *yearly* event) was no longer applicable to Orion (due to precession) even though the name of his toe remained as a relic of this identification. Instead, the name of dawn-wanderer/herald was being applied to the morning star, the *daily* rescuer of the sun (at least evidenced in Pagan England) requiring the poet to explain how the toe got its name;

ignorant of the fact that it was the sun that was originally carried in the basket, he places Orvandel (Venus), there instead, and invents the motif of the toe sticking out of the basket.

To reiterate:

- The original title of Orvandel, 'dawn wanderer' was given to Orion, whose broken-off toe, frozen from crossing the Milky Way, was the bright star Sirius. The name 'Orvandel's toe' stuck to that star, even when Orion lost the 'title' of 'dawn-wanderer' due to precession that saw him rise later than the spring equinox sunrise.

- The title Orvandel was also applied to Venus, the morning star (Earendel of the English poem), which often visibly heralded the dawn at certain times of the year (depending on its cycle).

- To explain the bizarre fact that Venus has a star named after its toe the poet takes the original myth of Orion/Thunor as sun-bearer and suggests that it was the morning star's toe that froze (when it poked out of the basket he was being carried in) rather than Orion's.

That such confusion was at all possible rests on the fact that the heavenly bodies behind the myth had changed over time – that Orion's role as sun-bearer had been forgotten, though the role of carrying *someone* across the Milky Way had remained in legend.

2.55 The rescuing Twins: A diurnal myth

Before dating the Orion version of the myth, however, it is necessary to clarify the differences between the daily and yearly sun-rescue myth. In the former, the role of sun-rescuer is not played by a fixed (spring) constellation (which will only work for around a month every year), but by Venus, which will rise before the sun daily for a set period in its 584-day cycle; while not a daily occurrence, when it does occur it is visibly dramatic. In Mesopotamia, the god of fertility, Dummuzi, is rescued from out of the underworld by his wife Ishtar – the planet Venus. Likewise, Venus can accompany the sun's descent as the Evening star during a different part of its cycle – yielding the image of the planet *following* the sun into the underworld (Campbell 1959, pp. 404, 412); yet another common motif is the morning and evening stars as separate beings, usually twins, such as the Greek Phosphorus and Hesperus.

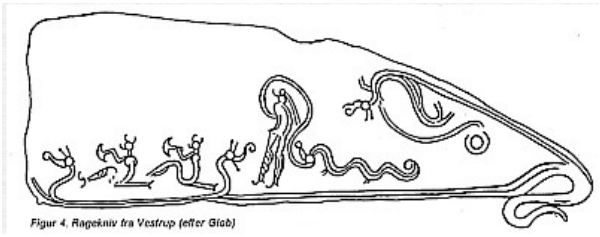
Nash's summary of the sun-rescue in IE myth includes such twins:

> 'In the particular story… the bright daughter of the sky god, who personified the radiance of the Sun itself - Eos in Greek, Aurora and Mater Matuta in Latin, Sol, Sul, Brigantia, Brigit, and Eostre in various northern lands - is chased in her chariot through the daylight

> sky by primeval monsters from the night and the nether world – either dragon-snakes… or wolves [in Germanic tradition]. At the crisis of sunset they capture her and take her into the waters of night. Her twin brothers – one divine and one mortal – come to her rescue and one, at least, ships her towards dawn, defeating or shackling night's monster(s) until the eastern bounds of morning are broken and she and her sun-disc are released for another day.' (West 2007, pp.186–91).

Her description of the rescuers as twins and the use of chariots relates to the Bronze Age variant of the myth (as does the image of the wolf which is a later Germanic variant), but her imagery gives the basic daily round in a clear and concise manner. During this period the iconography of the twin gods leading the sun-maiden on the boat across the heavens appear in Danish metalwork (Figs 25 & 26). And Kaul (1998; 2004; 2005) and after him Kristiansen and Larsson (2006), have made much of this imagery and its appearance in Scandinavian art.

These twins appear in Hindu myth as the Aśvins. These are divine horsemen, sons of the sun, associated with both horses and ships, and are rescuers and physicians. The Ṛgveda depicts them as suitors of their sister, Sūryā, daughter of the sun (10.85).



Figures 25 and 26.. Rescuing' twins on razor from Vestrup and on cult boat from Grevensvænge (Glob 1962)

The Aśvins are associated with the periods of dusk and dawn (as brothers to Uṣas, whom they rescue), and so are not to be associated with the constellation of Gemini (which can be seen all night during certain periods of the year); arguably they are both Venus - seen as separate beings as morning and evening stars, only seen at dusk and dawn, just prior to sunrise or after sunset, when the light of the sun is not obscuring them. Though initially the appearance of these twins in myth is confusing due to their similarity in name to the primal twins *Yemo and Yamī, they are of a different nature – though it provides a mechanism whereby these equine twins were able to replace *Yemo and Rumina in the Roman cosmogony to form Romulus and Remus.

The rescuing twins, then, belong to the diurnal myth proper (the defeat of night). The rescuing figure associated with Orion belongs to the yearly variant (the defeat of winter).

In the latter variant, however, due to precession, the constellations against which (or after which) the sun rose in spring changed over time, and the 'era' of Orion as such a marker passed; the appearance of 'Orion'-type symbols in the descriptions of mythical sun-rescuers, such as the three stones the Dagdae wears in his belt, suggest both a 'window' of time during which the myths were formulated, and a possible location.

2.56 Dating the myths

To obtain a date for the Orion as sun-rescuer imagery necessitates asking at which point did the victory of the sun/fertility over winter occur? One answer is that this occurred at spring, as evidenced in the Demeter/Illuyanki and Tiamat versions. That the victory over winter becomes apparent around the spring equinox is obvious; yet one might also argue that the moment of the sun's victory over darkness is at midwinter, as it is then that the days begin to lengthen, as in the Uzume myth. Midwinter marks the rebirth of the sun just as midnight marks the start of a new day – yet the new day does not dawn for some hours after midnight, just as the year does not emerge from winter until a few months after the midwinter solstice. Yet the two events are connected, as they no doubt were in the mind of ancient peoples. Perhaps, then, to separate the events is artificial; the myths depict an ongoing *process* – the rebirth of the sun and the subsequent arrival of spring as a seasonal myth rather than representing one single moment or day of the year.

However, for the sun to rise above Orion's hand at midwinter (a symbolic conjunction of sun and stars, like that of modern zodiacal birth signs, that would not be physically visible, as the sunlight obscures the constellation it rises against) would necessitate a very early date for the formation of this myth – for this occurred around 10,500 BC; yet, due to precession the totality of Orion's figure could only be seen south of the Southern Levant and in Egypt (Orion only becomes fully visible in the night skies above Anatolia after c. 7000 BC); any further north he would be increasingly obscured by the horizon; in Britain, for instance, only his raised arm would have been visible at this time; in the Yamnaya homelands just his head and arm. Such a date would place the correlation at around the time of the advent of farming in the Fertile Crescent, or support Frankfort's assertions that certain cow symbolism shared by Egyptian and Mesopotamian traditions might date back to a North African domestication horizon c 10,000 BC. (Frankfort 1944, p.200).

The next candidate is that the myth was originally marking the spring. This needn't imply an exact date, such as the spring equinox, only that some correlation should exist between the

arrival of warmer weather, lengthening days and vegetal growth (and, arguably birth of calves). The image of Orion as a giant *wading* across the sea with dawn rising behind him suggests that a) some part of the constellation is rising visibly before the sun in the spring and b) that his legs or at least feet are not visible on his progress across the horizon. Such an image corresponds with a view from the Near East (but not yet from northern Europe) from around 8,500 BC to 6,000 BC (Fig 27). With each passing year the rising sun would draw closer to Orion. The heliacal rising of Orion's belt, which may have formed part of this image, one which Sellers argues as important (1992, p.20), would have been visible from North Africa and the Levant c. 8000 BC. The heliacal rising occurred after a 106 day absence from visibility at this date, so the rebirth of the sun would be given added significance by Orion's own re-appearance.

Figure 26. Visibility of Orion from Southern Anatolia c. 7500 BC.

Figure 27. Orion leading the Sun, c 7500 BC from Southern Anatolia.

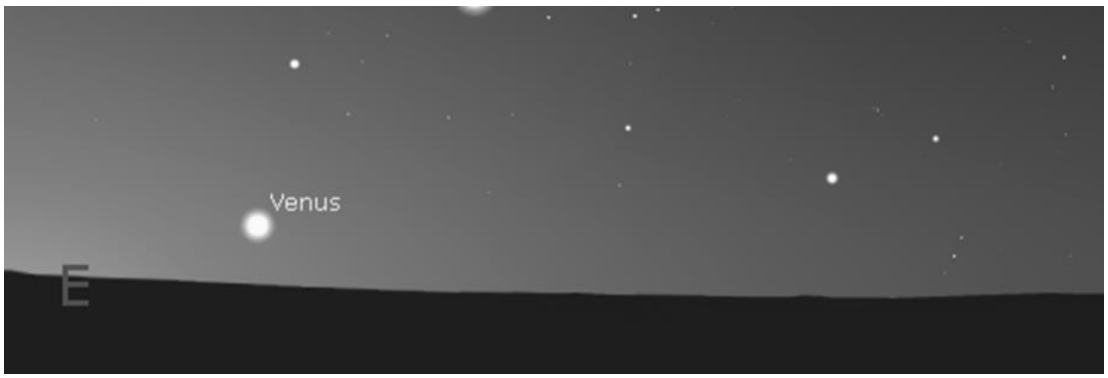


Figure 28. Heliacal rising of Orion's belt (right) c.8000 BC from Egypt at the Spring equinox

In time, due to precession, the rising of Orion has become later and later, so now the sun rises 'with' the constellation at the spring equinox, so the constellation itself is no longer visible. At this point it is over his shoulder (or in his up-raised hand) and the myth begins to emphasise the rescue of the sun across the waters on Orion's back. The date of this correlation is c 5500-4500 BC (Fig 30).

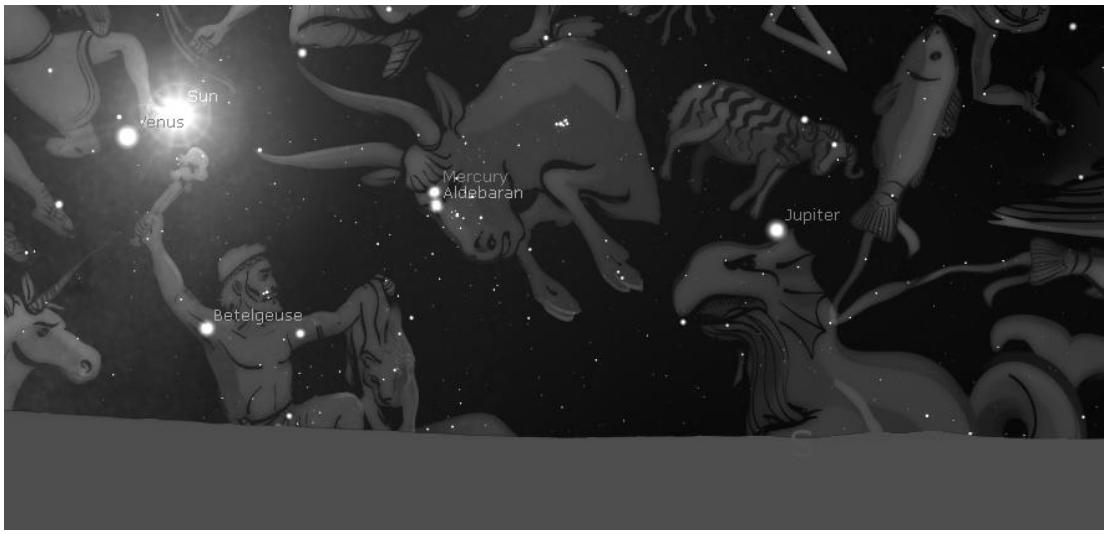


Figure 29. Rising of the sun above Orion's arm in the spring c. 4500 BC as seen from 47° N

Any myths, I would suggest, that preserve such a sun-bearing image and relate it to the period of spring, could reasonably be interpreted as relics from this period. As such a motif is clearly found in Celtic and Norse myth, and in the Greek Orion myth, the proto-myth from which they arose cannot have been formed later than this. The Vedic rescuers bear traces of Orion, yet not of the carrying-on-the-shoulders motif, which does appear in the later myth of Krishna. Arguably, then, the cows following the sun-rescuer is the earlier myth, but both pre-date the IE diaspora. Because the myth, in all its forms, is explicitly linked to sunrise and the end of winter, to argue that the Orion myth is a later invention, say, in Northern Europe or Greece, during the Late Bronze Age or Iron Age is untenable. The motif of rescue of fertility/the sun necessitates a specific seasonal correlation – i.e. midwinter to around the spring equinox - and this does not

coincide with the rising of Orion after c.4500 BC. It would make no sense to invent it at another time, if the identification of the sun-herald with Orion is correct. For after this point Orion rises after the sun at the spring equinox; by c. 3500 BC the spring sun rises between the horns of Taurus, and by the Iron Age it is rising in Aries and Hesiod is advising farmers to thresh their wheat when Orion rises with the sun – this being harvest time.

The 4,500 BC date is suggested as an important in Hindu symbolism by De Santillana and Von Dechend, who state that:

> "…in the Golden Age [the Krta Yuga], when the vernal equinox was in Gemini, the autumnal equinox in Sagittarius, the milky way had represented a visible equinoctial colure, a rather blurred one, to be true, but the celestial North and South were connected by this uninterrupted broad arch which intersected the ecliptic at its crossroads with the equator. The three great axes were united, the galactic avenue embracing the three worlds'" (1969, p.258)

Once Orion has completely exited the spring sky the cultures that utilised such myths might have been forced to seize on another 'dawn-wanderer' to fulfil the role left by Orion (Jane Sellers argues that the 80 year contention between Horus and Seth following the death of Osiris, explicitly linked with Orion by the Egyptians, was caused by such a 'search' for a new sun-bearing constellation (1992, pp.52–3)) though memories of the original role may still be preserved in some traditions, such as the motifs in the tale of Orvandel's toe. Yet the lack of a stellar myth concerning Taurus, say, or Aries leading the sun (the Egyptian and Minoan iconography of the sun between bull's horns perhaps reference the correlation) suggests that no such adaptation took place. One explanation is that the Bronze Age saw a rise in solar rather than stellar religion so the necessity of distinguishing the yearly 'rescuer' no longer retained its importance; the story remained as a myth with little understanding of its original meaning as precession had moved the stars; instead, the daily rescue of the solar disc became the important image, in which the role of the rescuing twins (Morning and Evening Star) was emphasised.

In summary, the image of the rescue of the sun on the shoulders of, or being led by, Orion is arguably either a midwinter or a spring equinox myth, as these are times the sun is 'reborn'. As the myth is astronomically derived, its origin can not only be pin-pointed in time, but also to a geographical location: the sun does not rise with Orion on either date as viewed from the Pontic-Caspian Steppe c.3500 BC, the posited place and time of origin of the P-IE culture (at the spring equinox at that location it rises nearly 2 hours *before* Orion, and at the winter solstice *over 5 hours before*; instead, Orion rises with the sun in early to mid-May, by which time spring is well under way at that latitude). To find Orion rising with the sun in the spring, first leading, then carrying the sun, we need to go further back in time, to between 8500–4500 BC, although an earlier midwinter correlation does exist for c.10,500 BC. The myth of Orion as rescuer, then,

only makes sense if it originated from either c. 10,500BC (from the south Levant/Egypt) or from c. 8500 BC (initially only visible from southern Anatolia southwards, but moving progressively north throughout this period); it is unlikely to have arisen after c. 4500 BC. It is, then, a Neolithic sky myth which, like the cosmogony, was adapted latterly by IE cultures from a pre-existing indigenous myth (Renfrew) or a borrowed one (Lincoln, Kristiansen) into a martial and expansionist myth. Certainly, the dating of the myths suggests it could have been in existence in Anatolia c. 7000 BC, the date and place of Renfrew's pre-P-IE, and in the Balkans c. 5000 BC, his recalculated P-IE formation date; it could also have been present in Cucuteni-Trypillia culture, which derived its genetic (and cultural) origins from Anatolia – and from here entered the Yamnaya (P-IE) world, having by this time reached Britain with farming. Yet even if the Orion correlation suggested here is erroneous, the form and nature of the myth, echoing other Neolithic Near Eastern cosmogonies, would suggest a similar point and date of origin. The Orion theory does not go against the internal dating evidence of the myths but supports them.

2.6 The Womb of the Sky

Might the above dating also suggest an origin of the lewd behaviour of the female figures associated with the Milky Way (Baubo, Indech's daughter, Uzume, Aditi)? The lifting of the skirts to reveal the vulva suggests, if the female has associations with the Milky Way, that we are looking at a stellar analogue of the 'vulva' in that locality. Wells has argued that the womb of Nut is in Cygnus, due to the bifurcation of the galaxy at this point suggesting legs (1992, pp. 305–321); alternatively, it could be argued that the womb must be associated with the place of the birth of the sun, i.e. *the point on the horizon from which the sun is seen to rise on the date of its 'rebirth' at midwinter*. If the Orion myth dates to c.7500 BC it is noteworthy that the place of the rising point of the sun at midwinter (it's 'rebirth', if we look at solar rebirth rather than spring/vegetal rebirth) lies exactly where the Southern Cross (hereafter *Crux*) rises during this period (note, in 10,500 BC Crux rises 6° south of the midwinter sun). This region of the Milky Way draws the eye (see figs 11 and 12) being especially bright, thus highlighing the dark 'rift' beside it, created by Magellanic clouds which seem to split the galaxy in to two 'legs'. Above the rift, within the brightest cloud of stars whose edge is marked by Alpha and beta Centauri, is a dark patch known as the 'coal sack', beside which sits the small, easily identified constellation of Crux, with its bright, colourful stars (Fig 31).

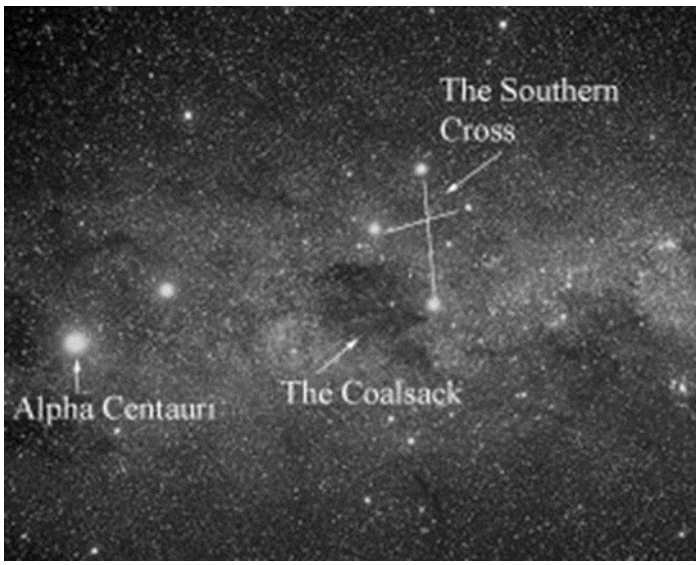


Figure 30. Crux (Southern Cross) and nearby features within the Milky Way

This group of stars, which modern astronomers depict as a suitably Christian cross, will be examined in a later part, suffice to say that these bright stars form a very clear diamond or lozenge shape which is a shape seen by some as a prominent female symbol in Neolithic art (see 5.21).

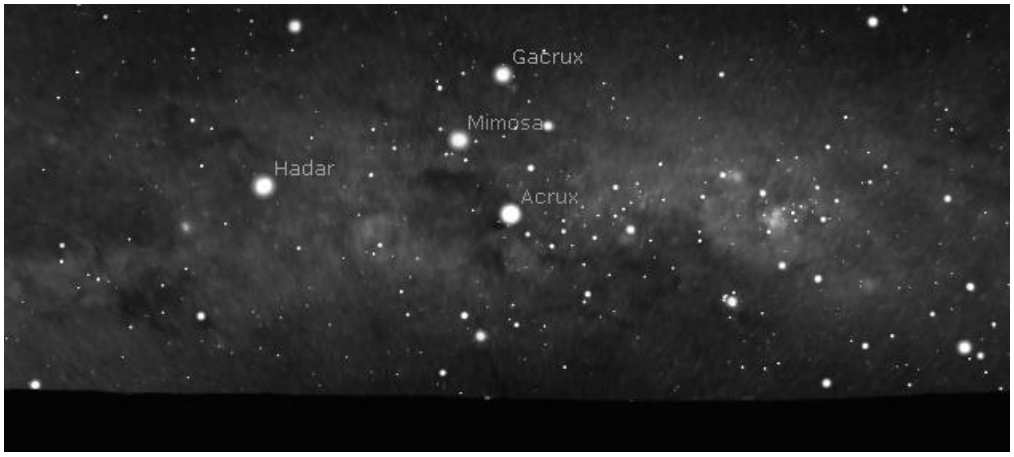


Figure 31. The main stars of Crux

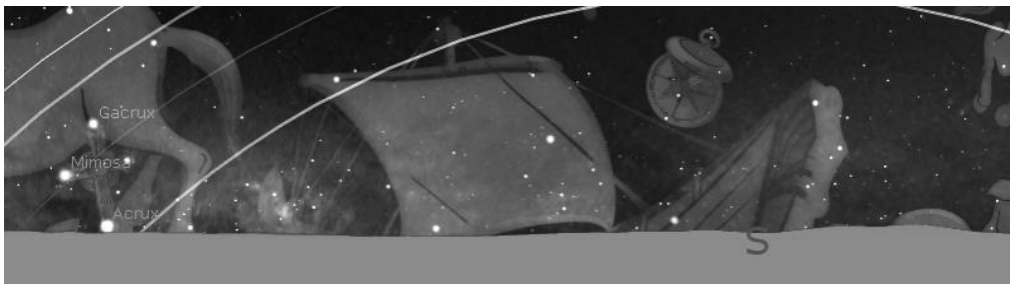


Figure 32. Rising of Crux on the same declination as the midwinter sunrise (red arc) c.7500 BC from Southern Anatolia

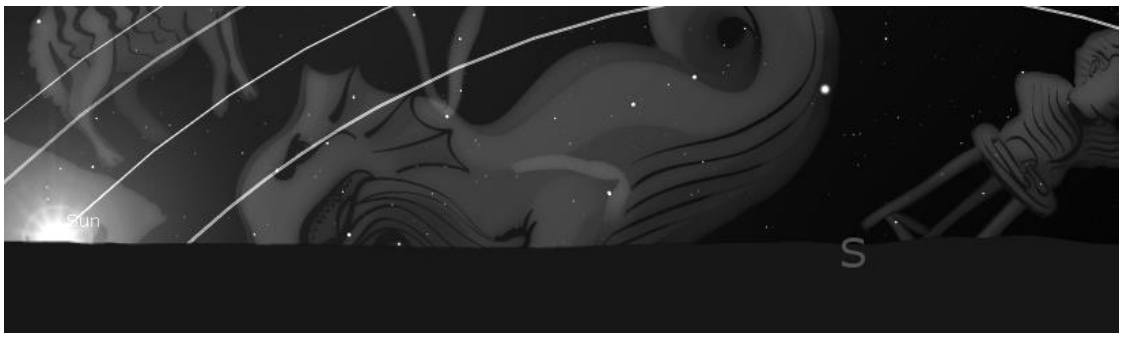


Figure 33. Midwinter sunrise c.7500 BC from Southern Anatolia

If Crux and/or the coal-sack was the vulva of the Milky Way goddess, as Mann has also suggested (2011, p.122) then the coincidence of the rising of this part of the Milky Way at the same point on the horizon as the midwinter sun (Figs 33 & 34) may have struck our ancestors as important – and it may have been this coincidence that cemented the correlation between Crux and the womb. The myths of the lewd dance of Baubo and Uzume, and the suggestive stance of Aditi, then, might be narrative depictions of a celestial event, when the Milky Way goddess 'revealed herself' before the release of the sun, i.e. Crux rose on the point on the horizon where the sun would later rise; thus the appearance of Crux, and by extension, the rising of the whole Milky Way from the horizon, was a signal, a precursor for the immanent release of the sun (from the same womb) hence in *Aided Chon Roi* the milky river appearing as the signal produced by Blathnat to rescue her and the magical cows from the spinning fort. A similar glimpse of the vulva is depicted in Lebor Gabála in the curly pubic hair of Indech's daughter that the Dagdae sees and responds to when he is wrestling with her, followed by a consummation. The appearance of Crux in the sky as the Milky Way lays down upon the horizon suggests the sky goddess lying upon the earth god, restoring their pre-separation state of primal unity. The appearance of Crux, then, presages the emergence of the sun at the same point but represents the point of union between heaven and earth, a sexual congress that arguably begets the sun which the Dagdae will then 'carry on his back' back to her father's camp – back across the sky to the underworld again (though in this version Indech's daughter plays the role of both Milky Way goddess and the sun, though this is not necessarily problematic given the Egyptian emphasis on the sun being the eye of the Milky Way goddess, and therefore part of her too).

In 4,500 BC (the date of the carrying image) Crux lies 5° south of the rising point of the midwinter sun, and by 3,500 BC the declination of the rising midwinter sun is shared by Sirius – perhaps when the myth of Indra sending his dog, Sarama across the Milky Way to steal the soma from the demons arises (Doniger O'Flaherty 1975, pp.71–72).

The myths suggest a simple plotline that reflect events in the heavens: the ‘dance’ of the Milky Way, its laying upon on the earth/horizon as Crux rises, followed by its rising and the emergence of the sun on the horizon from the same point as Crux (later, Sirius), presaged by the rising of Orion in the dawn sky; told mythically as the dance of Uzume/Hathor/Baubo, the exposure of the genitals, the birth of the sun (rescue of the cows/ cow’s eye), presaged by the hero (Shu/Indra) who separates the earth from the heavens (Geb from Nut: Vritra and Danu) holding it aloft with his hand(s) as he strides across the sky.

2.7 Summary and Discussion

In summary, these myths tell of the release (at creation, and repeated in daily and seasonal cycles) of a goddess/cow representing the powers of fertility and light, the very powers of creation that arise in the space created when the World Parents sky and earth are rent apart. In short, the myth of the killing of the dragon to free the cows is not a thematically separate myth from the creation. It is a re-actualisation, a repetition of the themes of the cosmogony. The only difference is, given its cyclical nature, it must end with the decline in the powers of the old day/year, thus the symbols which represent those forces (fertility/water/light/cows) must first be taken back into chaos (hence the first theft of these by the chaos dragon/serpent). The diastolic act of stealing places the forces back within the bounds of chaos, to a position identical to (and identified with) the state prior to the creation of the world. The hero deed, then, in freeing the forces of life from the bounds of Chaos, is identical to the splitting of the world parents by the first offspring be that Shu, Enlil, Marduk or *Trito. This similarity in form and myth is vital for the argument presented in this thesis – for the similarity of the Celtic myths to the hymns of the Ṛgveda suggest the proto-form of the cattle-theft myth from which both must have been derived must have involved the depiction of the ‘prize’ as a woman/goddess, suggesting again that such motifs were not ‘allegorical coloring…under the impact of later Indian speculative thought’ derived from a myth of the stealing of flesh and blood cattle as Lincoln suggests, but that the earliest myth, the P-IE *Ur*-myth, must have had such cosmological elements from the beginning.

By rejecting the idea that the dragon-slaying myth originated as an historical imperialising myth of a nomadic people, but instead a cosmogonic myth akin to Near Eastern myths, a Neolithic point of origin is thus further supported –for they suggest astronomical imagery that can, with the use of modern computer software that enables us to reconstruct ancient skies, be dated, and the date that they suggest further supports the Neolithic point of origins – both temporally and geographically.

Watkins, who has studied the dragon-slaying myth more than most, suggests a reading of the 'hero slew serpent' myth as, in origin, cosmogonic.

> 'The dragon symbolises Chaos, in the largest sense, and killing the dragon represents the ultimate victory of Cosmic Truth and Order over Chaos. As part of the Frazerian 'dying god' myth, it is a symbolic victory of growth over stagnation or dormancy in the cycle of the year, and ultimately a victory of rebirth over death.' (1995, p.299)

He goes on to say:

> 'This myth must be regularly and cyclically retold – and the attendant rituals re-performed – in order to perpetuate its effectiveness. It is in several traditions associated with the turning of the year… in the winter of the old year the forces of Chaos are in ascendancy: stagnation, dormancy, and death. With the new year the slow ascendancy of Order, rebirth and growth begins; but the myth must be re-narrated and the ritual re-enacted to assure the triumph of the power of Active Truth, Vedic *rta*, Avestan *asa*, over Chaos.' (*ibid*, p.300)

This is of vital importance. What he is saying is that the myth of the dragon-slaying is a return to the first chaos and a repetition of the primal creative act. Eliade says that 'The creation of the world, which took place, in *illo tempore*, is thus re-actualised each year.' (1971, p.58). We recall from the Illuyanki myth that the text begins by saying:

§1 (This is) the text of the *purulli* (festival) for the [. . .] of the Storm-god of Heaven, according to Kella, [the "anointed priest"] of the Storm-god of Nerik: When they speak thus—

§2 "Let the land grow (and) thrive, and let the land be secure (lit. 'protected')!"—and when it (indeed) grows (and) thrives, then they perform the festival of *purulli*.

(Beckman 1982, p.62)

The myth, then, forms the narrative behind a cyclical festival/ritual of rebirth. Many such festivals are evidenced from the Ancient Near East such as the *Heb Sed* (jubilee) in Egypt, and the *Akitu* ('barley sowing') in Mesopotamia (*see* Gaster 1950, pp.34–49, Eliade 1971, pp.55–58, and Frankfort 1948, pp.313–318 for a discussion of these ceremonies). These ceremonies show that ritual sites in the Near East were associated with rites that closely aped mythological patterns, many of a cosmogonic or seasonal nature reflecting an ongoing concern with establishing order linked to the heavens or a transcendental state they were performed at times associated with astronomical and seasonal importance such as solstices, within locales fashioned to mirror the wider cosmos (most notably some 'heavenly' locale); they involved rites of sacrifice and dismemberment; with the destruction and re-creation of the cosmos, and with the death and birth of the king/fertility/vegetation linked to the fertility of the land. The ritual

sites of the Near East, what's more, had a clear cosmological basis, and in some cases mirrored the night sky, with the acts performed within them symbolically taking place in the sky; the Ptolemaic texts in the temple of Edfu describes the pharaoh's actions in the *Heb Sed* court thus:

> He runs crossing the ocean
>
> And the four sides of heaven,
>
> Going as far as the rays of the sun disk,
>
> Passing over the earth,
>
> Giving the field to its mistress (Frankfort 1948, p.86)

***

In the first section of this thesis a putative P-IE cosmology has been reconstructed, which, when stripped of its 'Bronze Age' bias, reveals a pattern markedly similar to the cosmologies of the Near East. The motifs associated with this cosmology not only suggest a Neolithic genesis, but are also fully present within Celtic myths, some of which are explicitly linked to Neolithic ritual sites. In Near Eastern tradition such myths were not only linked to sites but were echoed in cosmogonic and seasonal rituals performed at them, and which also found expression in the form of the sites themselves, which reflected the mythic prototypes. Might such myths have formed the basis of cyclical seasonal rituals in the sites of Neolithic Britain? If the British and Irish sites were used for a similar purpose, then the reconstructed P-IE myths identified here may have formed the blue-print for both their 'shaping' and the rituals held at them. In Part Two the archaeological evidence for such an astronomically-derived 'shaping mythology' in the orientation of the entrances of Neolithic ceremonial sites will be examined.

Part Two: Reconstructing a landscape

Introduction

To date, no single theory has been credibly put forward which 'fits' the many varied forms taken by ceremonial sites of the British and Irish Neolithic and Early Bronze Age that are the focus of this study. While each theory may 'work' in a handful of instances, their limited applicability is not suggestive of an over-arching mythology – from which one might conclude that either such a mythology never existed (and we may be looking, instead, at differing regional cults), or if it did. it has not yet been identified.

The concentration on a singular event to 'explain' these monuments, such as a solsticial sunrise or sunset, is a relic of modern astronomical thinking that looks to pinpoint a precise moment of observation, and stems from an old idea, prevalent in the much of the twentieth century, of the builders of the megalithic sites as 'astronomer priests', such as postulated in the works of Lockyer (1909, ch.30) Hawkins (1974), and MacKie (1977). yet ethnoastronomers and anthropologists have shown that such a class is uncommon in pre-modern cultures and such astronomically precise observations and alignments are a rarity (Hutton 1991, p.111). Rather than looking for pin-point and momentary alignments on celestial phenomena such as the rising or setting of individual stars, we might find more merit in looking at much broader observations such as the rising and settings of whole constellations, involving ceremonies that may have lasted an entire night, extending over days or even weeks, which allowed the 'drama' of the night sky to enfold. If, instead of thinking of a ceremony as marking a single moment in time, we begin to look at it as a more prolonged activity, the multi-faceted nature of sites, and differences between them, begins to make more sense. For mythology, by its very nature, is a process, a story, with a beginning, a middle and an end; and if that mythology is somehow reflected (or partly derived from) the movement of the stars, or the sun, or the seasons, then for it to be reflected in ceremonial sites we would not expect to see the same uniform, static pattern encoded in every monument – but multifaceted sites or groups of sites with differing foci that might reflect different stages of this 'story', this process. The length of such a 'process' needn't be limited, either; the Native American 'Ghost Dance' religion involved dances that lasted for 5 days (Mooney 1896), the same timeframe as the Egyptian *Heb Sed*; the Babylonian *Akitu*, or New Year's festival was a 12-day ceremony (that was a seasonal re-enactment of the cosmogony) celebrated in several differing temple locations around the city (Eliade 1971, p.55).

In modern times the Islamic Hajj takes place over a week, while the Hindu Kumbh Mela, a pilgrimage whose date is astronomically defined, and which involves ritual bathing in sacred rivers, can last for 55 days. To reduce the 'window of use' of a henge or passage grave to a single moment of sunrise or sunset is to misapply what anthropology and ethnology tells us. We might better see the whole Stonehenge environs, for example, as a 'ceremonial landscape' in which different sites might be used on different hours of the night, or different days/nights or even different seasons; the setting of the sun at the midwinter solstice might be witnessed by hundreds of people stood along the Avenue, for a few minutes a day, for the 5 days of the solstice – yet other celestial happenings, such as the rising of the Milky Way after sunset might be witnessed nightly for months. Such rituals may have been less a gathering of elites focussing on a single moment once a year, than the equivalent of, say, a modern music-festival, with large groups of people moving from 'stage' to 'stage'.

In this thesis, then, we are arguing that the twin sources of reconstructed P-IE mythology and archaeoastronomy can be utilised to identify an over-arching mythology behind the shaping of ritual monuments, and that the ritual re-enactment of this mythology (or at least major themes within it), which as a process or drama would involve changing foci over time, provides an explanation for many of the differing forms of ritual site. Furthermore, the fact that the position of the astronomical phenomena utilised in these rituals changes both over time and with one's geographical position might also explain the development of certain local variations or 'groups' of sites, the seemingly differing foci of which can still be explained within the broader mythological pattern (i.e. the alignments on Sirius found almost uniquely in sites in Orkney and the Boyne Valley). The thesis will aim not only to identify the hitherto unobserved shaping myth behind the sites but also suggest the nature of the ritual activities performed there, while helping to fit these findings into the broader European and Near-Eastern cultural provinces.

Chapter Three: Initial Results

3.1 Site Selection

The sites studied in this thesis are the hengiform enclosures of the late Neolithic and Early Bronze Age, circular features associated with them, and several passage graves. The selection of sites, as detailed in the introduction (*Bridging archaeology and myth – in search of a methodology vii*), was based on availability of information with a mind also to selecting as wide a geographical sample as possible. Wainwright and Harding's popular books on henges (1989; 2003) were used to identify what were considered 'core' sites, though the main criteria were the availability of excavation plans or clear aerial photographic and satellite images (many available through Google Earth) with correct position of astronomical/geographical (as opposed to magnetic) north marked, that would allow the original position and thus potential orientation of the entrances to be estimated. A sample of 55 such sites were selected. These were made up of 48 henges (including the 'superhenges' of Wessex) plus two associated circular ancillary monuments, and 5 passage graves.

The chosen sites were (roughly south to north) the Stripple Stones (Cornwall); Stanton Drew, Gorsey Bigbury and the Priddy circles (3 of the 4 henges) (Somerset); Maumbury Rings, Knowlton, Wyke Down 2, Mount Pleasant enclosure and Mount Pleasant site IV (Dorset); Stonehenge, Fargo plantation henge, Durrington Walls, Woodhenge, Coneybury Hill henge, Figsbury henge, Avebury, the Sanctuary and Marden (Wiltshire); Ringlemere (Kent); the Devil's Quoits and Dorchester-on-Thames (Oxfordshire); Arminghall (Norfolk); Arbor Low and the Bullring (Derbyshire); Llandegai A and B (Caernarfonshire); Bryn Celli Ddu henge (Anglesey); Little Argham (Yorks); the three Thornborough henges, Nunwick, Hutton Moor, Cana Barn and Castle Dykes (N Yorks); King Arthur's Round Table and Mayburgh (Cumbria); Millfield North, Coupland and Yeavering (Northumberland); Balfarg (Fife), North Mains (Perthshire); Dunragit (Galloway); Cairnpapple (West Lothian); Stones of Stenness, Ring of Brodgar (Orkney); and in Ireland Dowth henge and Newgrange Pit Circle (Co. Meath) and the following passage graves: Bryn Celli Ddu, Barclodiad y Gawres (both Anglesey), Fourknocks, Newgrange and Site Z Newgrange (Co. Meath) (Fig 35)

Figure 34. Map of sites discuused in this thesis

3.2 Results

The diagram below (Fig 36) shows the orientations of the entrances of all 55 test sites. It represents an approximation of the extent of the horizon visible through the entrances, but as a stand-alone diagram it cannot be used to draw any conclusions about possible astronomical targets, as for that we need to factor in horizon levels from each site. For instance, two sites might have entrances oriented at c. 175° degrees east of north, yet due to differing topographies might point to different objects in the sky: one site might be surrounded by high hills and therefore its entrance might point towards a certain star when it rises at 10° over the horizon, while another site with the same orientation but on flatter terrain might be referencing the rising

of a different star rising at 3°. Conversely, a spread of seemingly differently oriented entrances from 150° to 165° might all be referencing the same star but at different declinations (declination being the angular distance of a point north or south of the celestial equator). Proximity of results on this chart needn't suggest multiple alignments on the same object, nor should a dispersed pattern suggest the opposite. In each case clarity is provided in Appendix 2, but as a basic pattern finder it must suffice.

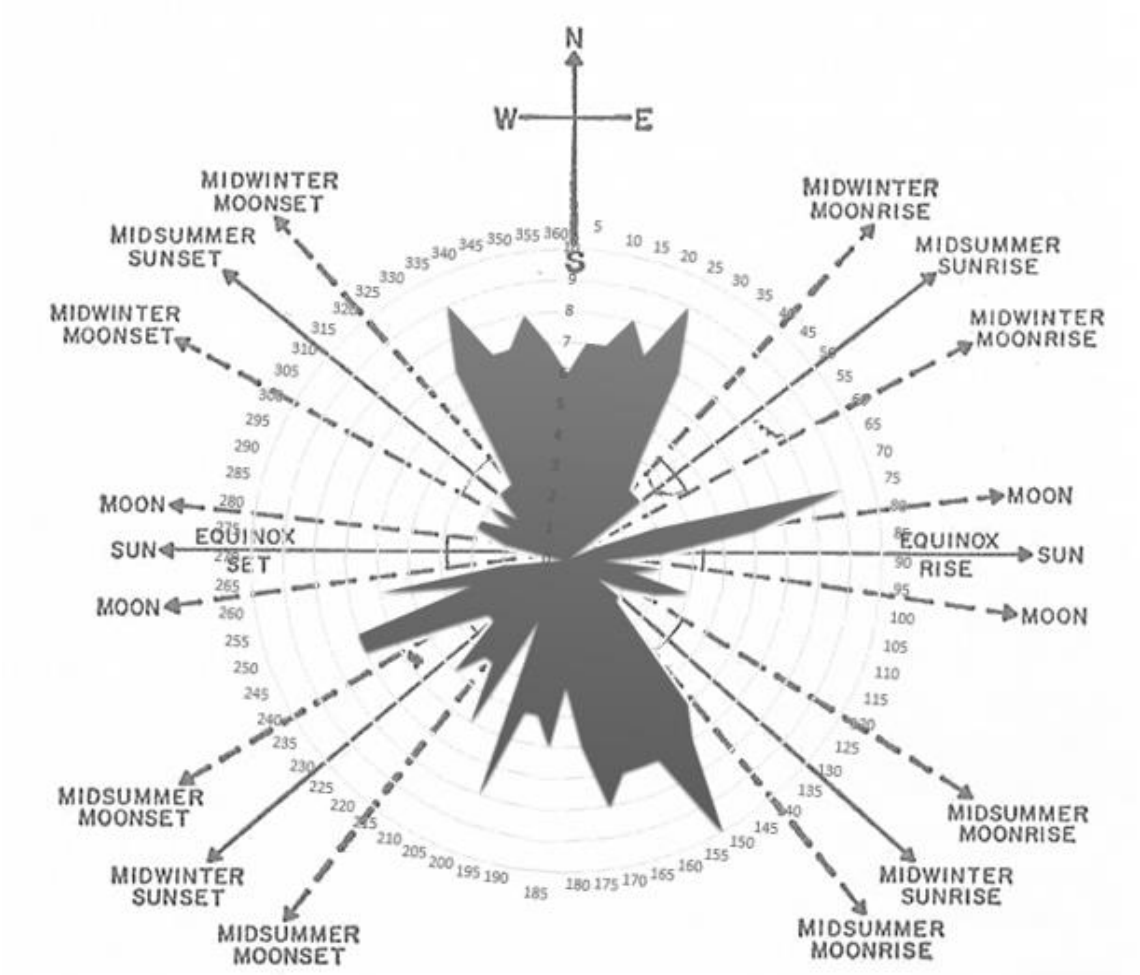


Figure 35. Orientation of the entrances of the sites studied in this thesis.

Despite the drawbacks of the diagram, it can still be of use in suggesting rough alignment patterns, as irrelevant of declination there are certain astronomical phenomena that only occur within certain areas of the sky. If the sites were luni-solar, for instance, as has been suggested, one would expect the orientation of their entrances to be mostly east-west, that is within the arcs that delimit the rising and setting points of the sun and moon, outside of which these heavenly bodies never stray; however, the diagram shows that far from this being the case there is a concentration of orientations outside of this arc – grouped mainly to the NNE, NNW and SSE, with a smaller 'spur' in the SSW. Such orientations could not be luni-solar or planetary and

would have to be aligned to stellar phenomena. A cursory glimpse through the literature reveals that many sites are described as having 'north-south' oriented entrances, yet the diagram clearly shows *exact* north and south orientations are not common, negating any suggestion of polar alignments. Instead there is a concentration some 25° or so each side of the cardinal points suggesting an orientation on something offset from exact north or south. In the northern half of the chart there is an equal balance between the eastern and western orientations; in the southern half the emphasis seems rather on the south-eastern quadrant, with corresponding western side not as pronounced.

There are, however, alignments within the luni-solar zone, some of which fall at the solstices but others which do not seem to match any specific solar or lunar extreme, though as stated above each site needs to be analysed individually to factor in horizon declination.

A breakdown of orientations shows a number of 'groups' of orientations shared by many sites, suggesting a clearly definable pattern.

Table 1. Sites aligned to the rising and/or setting sun at midsummer

Rising		**Setting**	
Site	**Orientation**	**Site**	**Orientation**
Bryn Celli Ddu	63°	Barclodiad y Gawres	312°
Castle Dykes	40–50°	Durrington Walls	303–307°
Dowth	45–60°	Balfarg	282–295°
Maumbury Rings	15–55°		
Stonehenge	38–50°		

Table 2. Sites aligned to the rising and/or setting sun at midwinter (sites aligned on both in Bold Italics)

Rising		**Setting**	
Site	**Orientation**		**Orientation**
Arbor Low	135°	***Arbor Low***	225°
Bryn Celli Ddu (henge)	135°	Dowth	222–236°
King Arthur's Round Table	136–150°	Knowlton	210–230°
Newgrange	133°	Ring of Brodgar	217°
Wyke Down 2	130–152°	Sanctuary	226°
Dorchester-On-Thames	131–153°	Stonehenge	228°
		Stones of Stenness	215°

Table 3. SE-NW Alignments

SE-NW Alignments		
Site	**SE**	**NW**
Mount pleasant enclosure	140–150°	
Little Argham	115–148°	
Wyke Down 2	130–152°	
Dorchester on Thames	131–153°	338–353°
Arbor Low	150–165°	315–333°
Barclodiad y Gawres	158°	338–011°
Bullring (Derbyshire)	175–183°	358–004°
Cairnpapple	155–175°	345–017°
Cana Barn	167–184°	354–004°
Coupland	148–175°	325–348°
Hutton Moor	164–174°	344–354°
Nunwick	158–175°	338–355°
Thornborough N	140–155°	325–345°
Thornborough M	140–160°	325–340°
Thornborough S	135–148°	320–333°
Ring of Brodgar	132–137°	311–315°
Gorsey Bigbury	150-155° looking in	
Ringlemere		343–350°

Table 4. SW-NE Alignments

SW-NE Alignments		
Site	**SW**	**NE**
Sanctuary	205–225°	
Stanton Drew	194–210°	
Balfarg	182–190°	
Newgrange pit circle	183–190°	
Fargo plantation henge	182–208°	352–035°
Bryn Celli Ddu henge	205°	0 and 24°
Woodhenge	205–225°	15–34°
Knowlton	210–230°	20–40°
Mount Pleasant site IV	193–197°	0–20°
Millfield North	177–190°	0–26°
Dunragit	198°	19°
Fourknocks	200°	20–28°
Priddy group as a whole	190–200°	5–20°
Maumbury Rings		15–55°
Stripple Stones		24°

(Stand-alone examples that do not fit in with these other sites include Stonehenge that has both a SE and a SW alignment, the Stones of Stenness that aligns north, and Avebury and Marden that have both SE-NW and SW-NE alignments)

Table 5. Sites with May-day orientations

Rising		Setting	
Site	**Orientation**	**Site**	**Orientation**
Avebury	66–75°	Balfarg	282–295°
Coneybury hill	68–75°	Sanctuary	285–305°
Devil's Quoits	72–87°		
Figsbury Ring	76–82°		
Llandegai A	257–261° (looking in)		
Llandegai B	75–79°		
Marden	69–85°		
Mayburgh	75–110°		
North Mains	68–77°		
Stanton Drew	70–80°		

Table 6. Sites aligned to Orion stars

Rising		Setting	
Site	**Orientation**	**Site**	**Orientation**
Castle Dykes	100–115°	Arbor Low	225°
Durrington walls	120–128°	Arminghall	230–245°
Knowlton	95–105°	Avebury	253–263°
Little Argham	115–148°	Devil's Quoits	255–265°
Mount Pleasant enclosure	95–107°	Figsbury	238–250°
Mount Pleasant site IV	90–97°	Llandegai B	253–257°
Thornbourough (M)	140–160°	Mayburgh	248–255°
Wyke Down 2	130–152°	Millfield North	240–247°
Yeavering	93–112°	***Mount Pleasant site IV***	245–250°
		North Mains	240–260°
		Stripple Stones	248–258°
		Yeavering	283–300°

Table 7. Sites with alignments referencing Sirius

Rising		Setting	
Site	**Orientation**	**Site**	**Orientation**
Knowlton	126°	Coupland	215°
Mount Pleasant site IV	124°	Dowth henge	222–236°
Newgrange	133°	Ring of Brodgar	227°
Wyke Down 2	130–152°	Stanton Drew	236°
		Stones of Stenness	223°

Table 8. Sites with alignments involving hills and artificial mounds

Site	Hills/Mountains	Mounds
Arbor Low		X
Avebury	X	X
Balfarg	X	
Barclodiad y Gawres	X	
Bryn Celli Ddu Henge	X	
Bryn Celli Ddu P G	X	
Castle Dykes	X	
Coupland	X	
Dorchester on Thames	X	
Dunragit	X	X
Figsbury	X	
Fourknocks	X	
Knowlton	X	X
Marden	X	X
Mayburgh	X	
Millfield North	X	
Mount Pleasant enclosure		X
Mount Pleasant site IV?		X
North Mains Perthshire	X	
Ring of Brodgar	X	
Sanctuary	X	
Stanton Drew	X	
Stones of Stenness	X	
Stripple Stones	X	
Yeavering	X	

3.3 Likely candidates of observation

Aside from solsticial orientations (though such should be investigated for shared stellar alignments such as the alignment of the passage at Newgrange to the midwinter sunrise which also aligns on Sirius) the orientation of the entrances, if presumed to be stellar, offer several possible targets. Several stars will pass any given point on the horizon throughout a 24-hour period – so how does one identify which of the many possibilities an entrance might be aligned on? The table below (Table 9) outlines the most probable foci, being a list of stars, in order of absolute visual magnitude (MV), that might be seen through the entrances, based on the orientation diagram above (Fig 36).

Table 9. Possible stars involved in alignments

V Mag. (m_V)	Star name	Bayer designation
−1.46	Sirius	α CMa
−0.74	Canopus	α Car
−0.27 (0.01 + 1.33)	Alpha Centauri (Rigil Kentaurus)	α Cen
0.03 (−0.02 - 0.07var)	Vega	α Lyr
0.13 (0.05 - 0.18var)	Rigel	β Ori
0.50 (0.2 - 1.2var)	Betelgeuse	α Ori
0.61	Hadar	β Cen
0.76	Altair	α Aql
0.76 (1.33 + 1.73)	ACrux	α Cru
0.86 (0.75 - 0.95var)	Aldebaran	α Tau
0.96 (0.6 - 1.6var)	Antares	α Sco
1.25 (1.21 - 1.29var)	Deneb	α Cyg
1.25 (1.23 - 1.31var)	Mimosa	β Cru
1.39	Regulus	α Leo
1.62	Shaula	λ Sco
1.62 (1.98 + 2.97)	Castor	α Gem
1.64	Gacrux	γ Cru
1.64	Bellatrix	γ Ori

1.65	Elnath	β Tau
1.69 (1.64 - 1.74var)	Alnilam	ε Ori
1.77	Alnitak	ζ Ori A
2.09	Saiph	κ Ori
2.23 (2.23 - 2.35var)	Mintaka	δ Ori
2.23	Sadr	γ Cyg
2.24	Schedar	α Cas
2.28 (2.25 - 2.31var)	Caph	β Cas
2.47 (1.6 - 3.0var)	–	γ Cas

But the above list must be tempered by the world-wide phenomenon of grouping stars in to constellations or asterisms. While certain individual stars may impress because of their brightness, the bigger picture often involves their position in relation to other stars. Thus, while it may be that certain stars in the list above are bright, some may have formed part of a pattern (whether that pattern be the same as a modern constellation or not) that mostly falls outside of the viewshed created by the entrance, or which is part of a less impressive pattern, making it less likely they are being referred to; conversely, a less bright star might be being referenced because it falls within a grouping that is viewable through the entrance or easily 'recognisable' as a coherent 'pattern'. To use a modern example, the bright star Vega in Lyra is of higher magnitude than any of the stars in Ursa Major, yet the average 21st-century westerner would be more able to point out the 'Plough' or 'Big Dipper' in the sky than either Vega or Lyra. The overall shape of a star-group, then, may be more memorable than individual stars. Brightness, then, is not necessarily more important than pattern (though Hayden and Villeneuve 2011, would disagree); for example, the bright star Deneb in Cygnus sets in the NW and rises in the NE and can be seen from some of the northern-oriented henges in this study; yet as it appears to the eye to form part of the larger cross-shaped pattern that we today call the constellation of Cygnus, most of which falls outside of the viewshed, it suggests that if the henge-builders similarly grouped stars in to larger patterns, and grouped this particular star (Deneb) into a larger similar cross-shape, whatever it may have represented, that it was deemed of less importance than, say, less bright stars in the 'W' shaped close-knit group of stars in the Milky

Way that we today define as the constellation of Cassiopeia, the entirety of which is viewable from the same entrances, and some, if not all, of whose stars every northern entrance (save the Ring of Brodgar) can be shown to reference – which is not the case with Deneb.

The mythology helps to suggest which stars are being referenced, but this cannot be allowed to sway our initial observations. We must look at each side individually and deem which star or constellation is the most likely fit, all the while bearing in mind that our present-day constellations may have been interpreted very differently in the Neolithic – so that when we say, for instance, that a certain entrance aligns 'on Cassiopeia', what we mean is that it aligns 'on the grouping of stars that we now call Cassiopeia'.

The results of such study, gleaned from Appendix 2, suggest the following:

- The north-western (setting) entrances can be shown to point to the setting of stars in Cassiopeia in almost every case. Similarly, the NE entrances all align on the rising of Cassiopeia.
- The South-eastern entrances aligns on the Southern Cross (*Crux*), as the SW entrances do for the setting of the same, in every case. This observation is compounded by the fact that these constellations (Cassiopeia and Crux) are 'linked' in a kind of 'see-saw' motion, so that the rising of one corresponds to the setting of the other – often at the same moment or within minutes – and that both lie within the band of the Milky Way.
- That 40% of sites reference both directions (Avebury and Marden reference all four rising and setting points) suggests this see-saw rising/setting was noteworthy.

It is therefore proposed that these entrances, if astronomical, align on these two regions of the sky in the Milky Way that both fit a constellation in its entirety and that are linked by a corresponding rising/setting action.

What is also noteworthy is the fact that these entrances are involved in another pattern – the NW-SE alignments suggest the rising of Crux/setting of Cassiopeia, but as this occurs something remarkable was happening in the sky: from c. 4000 BC – 2000 BC this rising of Crux coincided with the Milky Way sitting on the earth along ringing the entire horizon (becoming most 'exact' c. 2800 BC, according to Mann 2011, p. 93). This would have been an impressive sight. When Crux was setting and Cassiopeia rising the position marked by these stars was also matched by the curve of the Milky Way so that the entrances framed the rising and setting points of the galaxy. The same would be true of the SE-NW entrances when Orion is straddling the south, shortly after the rising of Canis Major. This brings us to the next set of alignments.

Other regions referenced suggest that the constellation of Orion was deemed important. This is a large constellation and the alignments concentrate on the belt stars and the shoulders and feet; 35% of sites show orientations towards these stars; 22% of sites have both Orion and Cassiopeia/Crux alignments, but a significant number, 12% just reference Orion; likewise, the bright star Sirius is referenced.

One puzzling alignment is that found in 22% of sites, and half of which occur with no other alignment, is of c. 75° – this aligns on no bright stars. However, if it is looked at as a solar reference then it produces two interesting results – firstly it marks the rising of the sun at the point where the ecliptic crosses the galactic equator – in other words one of the two points in the sky where the sun crosses the Milky Way; this is at the feet of Gemini, in the outstretched arm of Orion, just before the horns of Taurus. The other crossing point is near Scorpio and Sagittarius, but only 15% of sites might be interpreted as orienting on Antares in Scorpio, and these sites are more likely to coincidentally refer to Antares while targeting Orion. This crossing-point near Orion suggests another Orion correlation, in which case 44% of sites align on Orion. Within this thesis we shall use the term Orion-Point (OP) to refer to this alignment. The second noteworthy factor of this alignment is its date – on, or around, May 1st throughout the period we are dealing with. This will be discussed in a later section. What is important is that it suggests another correlation involving another aspect of the Milky Way.

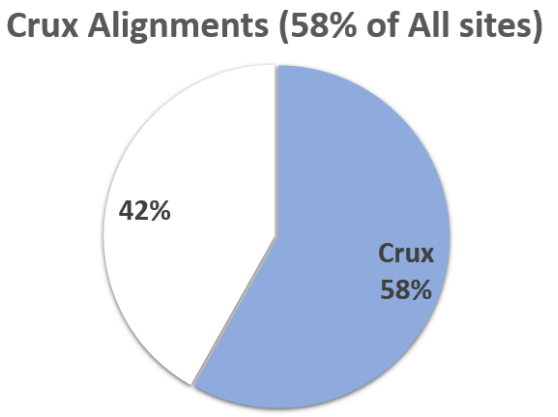


Figure 36. Percentage of Sites aligned to Crux

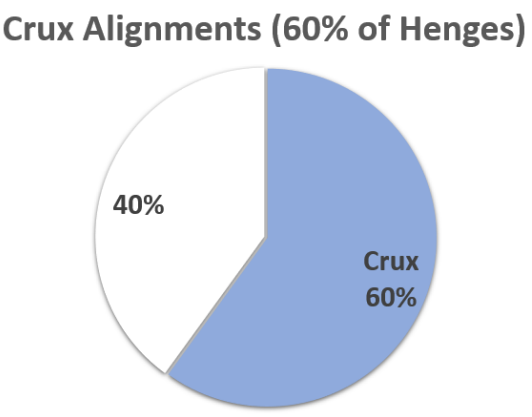


Figure 37. Percentage of henges aligned to Crux

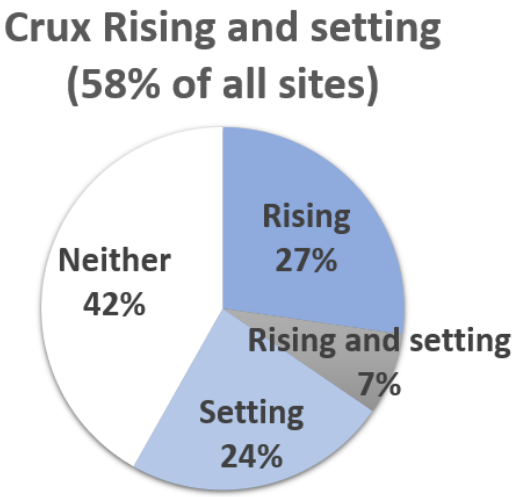


Figure 38. Percentage of Sites aligned to the rising and/or setting of Crux

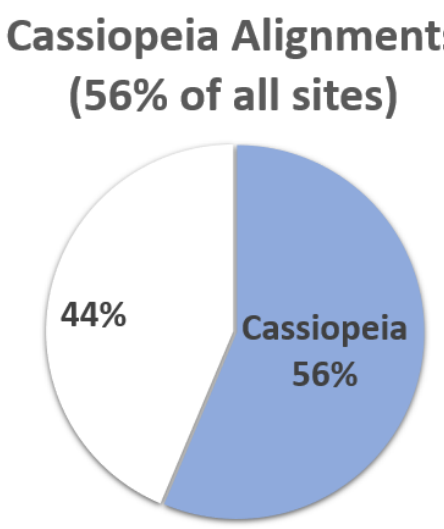


Figure 39. Percentage of Sites aligned to Cassiopeia

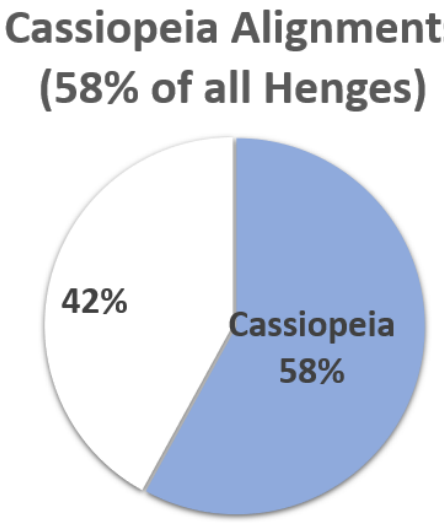


Figure 40. Percentage of henges aligned to Cassiopeia

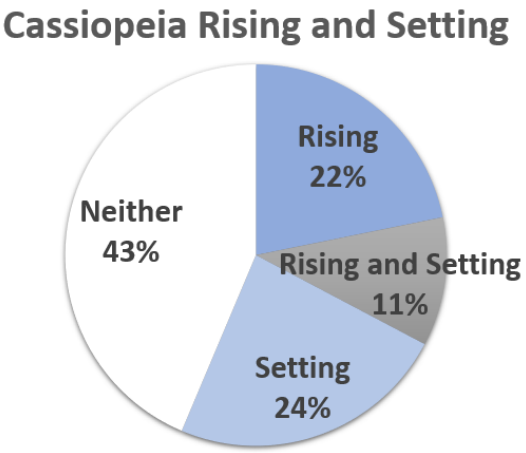


Figure 41. Percentage of Sites aligned to the rising and/or setting of Cassiopeia

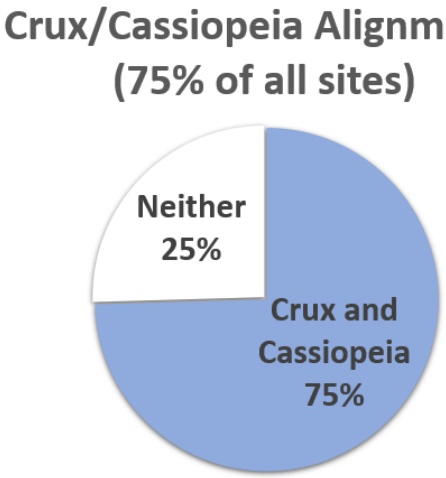


Figure 42. Percentage of Sites aligned to Crux and/or Cassiopeia

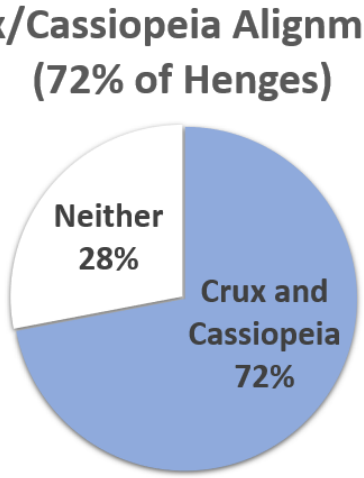


Figure 43. Percentage of henges aligned to Crux and/or Cassiopeia

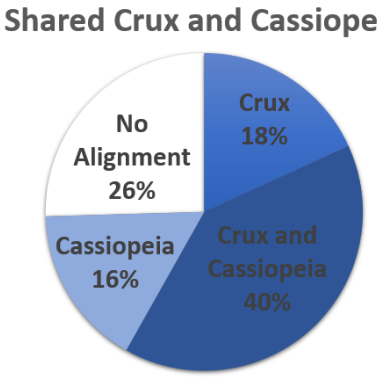


Figure 44. Breakdown of alignments of Crux/Cassiopeia sites.

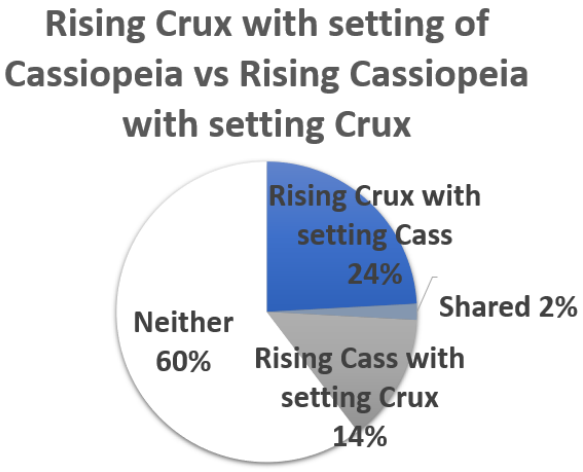
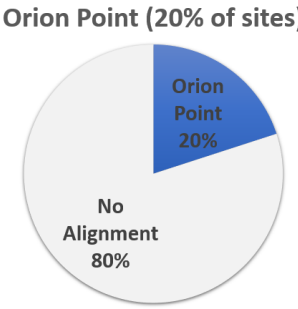


Figure 45. Percentage of sites showing rising of Crux with setting of Cass vs setting of Crux with rising of Cass



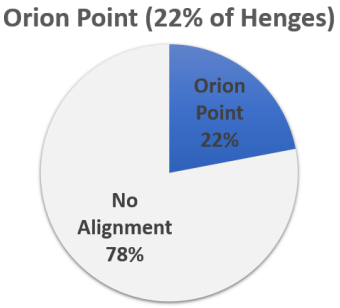


Figure 46. Percentage of sites aligned to the 'Orion Point' *Figure 47. Percentage of henges aligned to the 'Orion Point'*

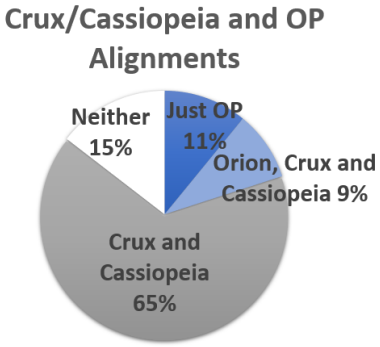
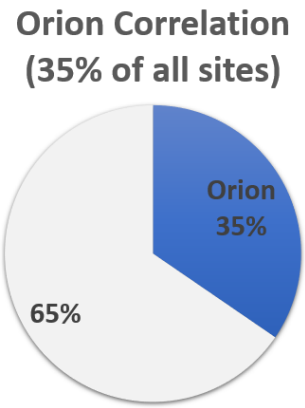


Figure 48. Percentage of sites with Crux/Cassiopeia and/or Orion Point alignments



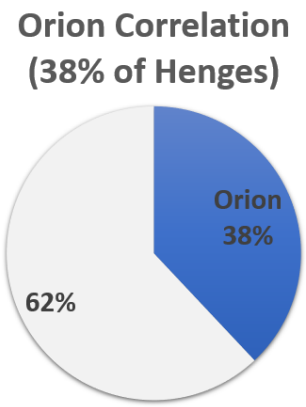
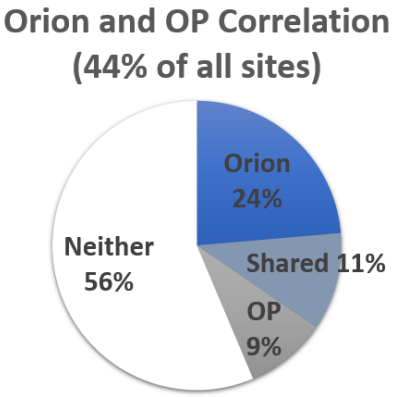


Figure 49. Percentage of sites aligned to stars in Orion *Figure 50. Percenage of henges aligned to stars in Orion*



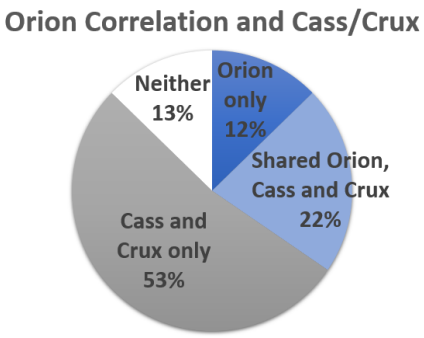


Figure 51. Breakdown of sites aligned to Orion and/or the Orion Point *Figure 52. Percentage of sites with Crux/Cassiopeia and/or Orion alignment*

In summary, most sites in this study appear to be aligned to one or other of a set of specific horizon points; only two sites reference all alignments, and these are Marden and Avebury – both 'super-henges', so atypical of the smaller, isolated site. The fact that smaller sites only define one or other of the alignments suggests that another factor was at play that will have to be returned to.

3.4 A suggested 'drama'

The identification of the probable stellar alignments presented in summary above but found in detail in the gazetteer (Appendix 2) are made more stable by the interaction of each element within a wider pattern – one might term it a heavenly 'drama' with the changing sky over the period of several hours providing a number of set key points that are referenced in the alignments. Again, this will be expanded in the next section, but the key points are as follows:

1. Orion rises in the south-east, followed by Sirius (Fig 54; Tables 6 & 7)

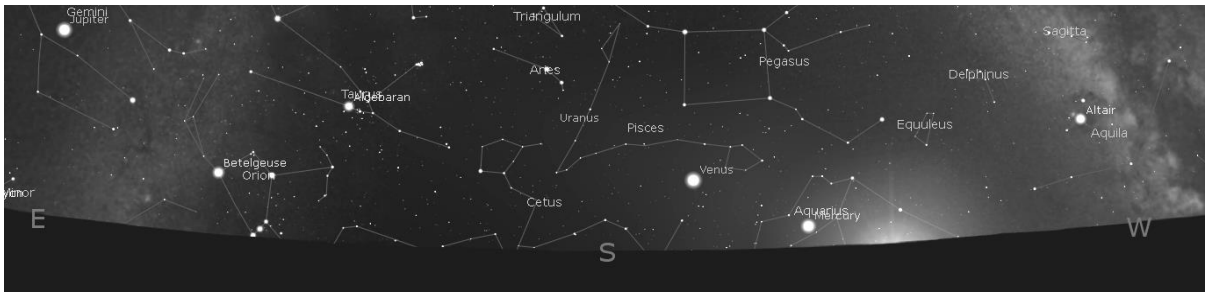


Figure 53. Orion rising in the south-east, followed by Sirius

2. As Orion visibly culminates in the southern sky in the winter the Milky Way aligns on the NW-SE entrances of the henges, like a celestial pathway linking the entrances together (Figs 55, 5 and 57; Table 3)

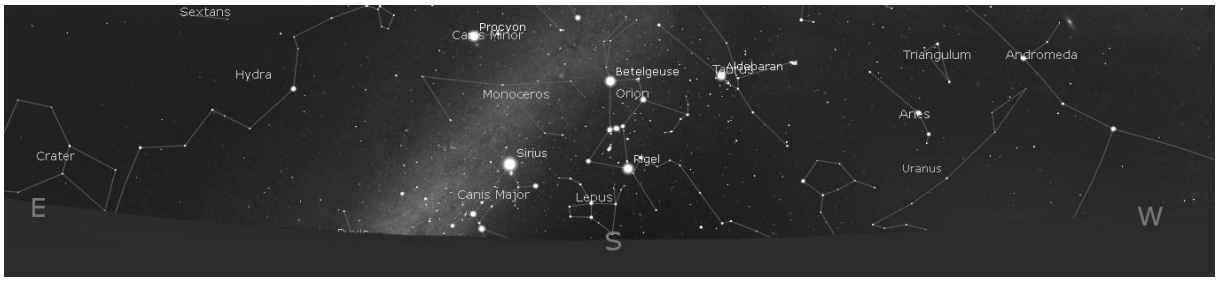


Figure 54. Orion culminates in the southern sky as the Milky Way aligns with the SE entrance

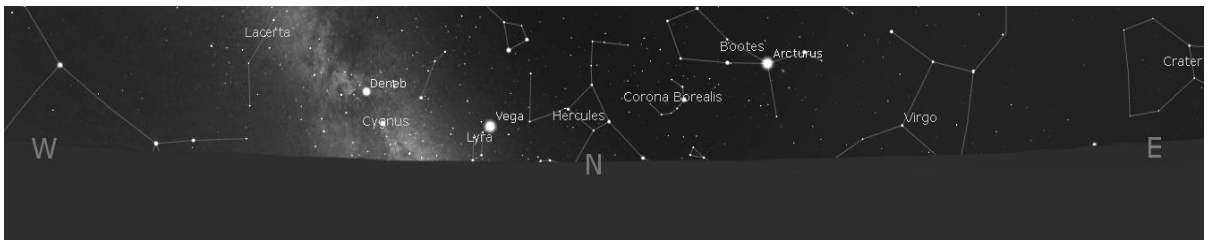


Figure 55. At the same time, the Milky Way aligns with the NW entrance

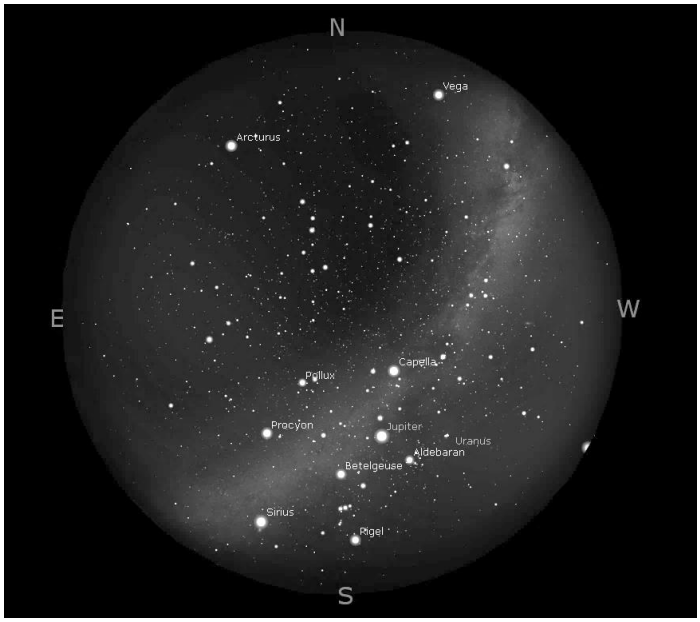


Figure 56. The pattern of the Milky Way mirroring the alignment of the NW-SE entrances as Orion culminates in the southern sky

3. Orion and Sirius set in the west; at the same moment Crux begins to rise and Cassiopeia sets. This point is marked by the Milky Way ringing the horizon (Figs 58, 59 and 60).

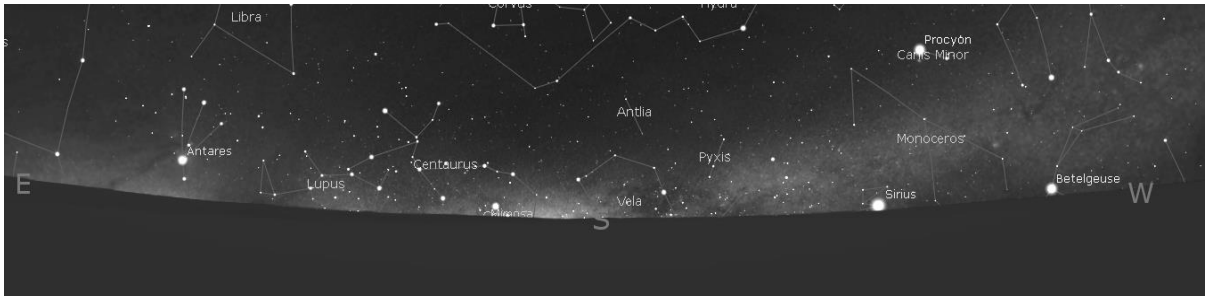


Figure 57. Orion and Sirius set in the west as Crux begins to rise

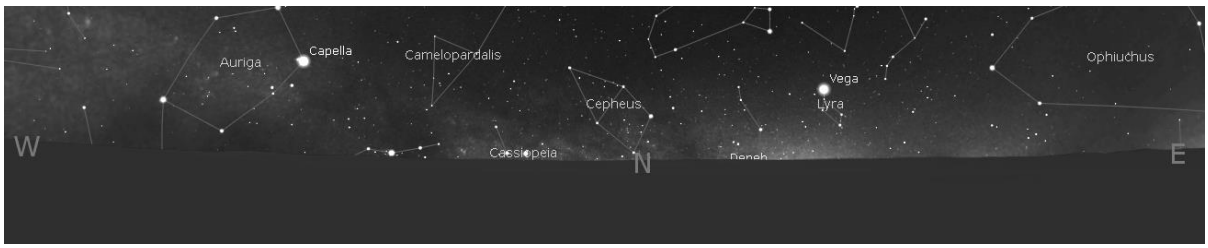


Figure 58. At the same moment Cassiopeia is setting to the north

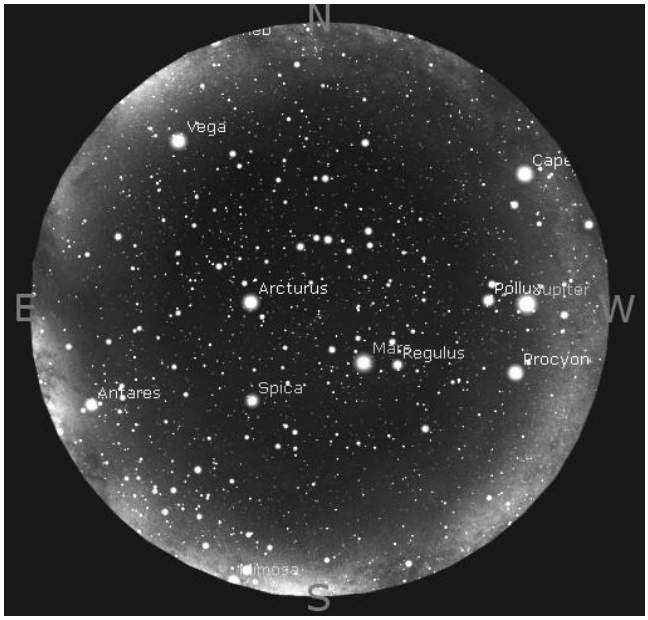


Figure 59. At the same moment, the Milky Way rings the entire horizon

4. Crux culminates in the south as Cassiopeia reaches its lowest position (in most locations below the horizon) in the north (Figs 61 and 62).

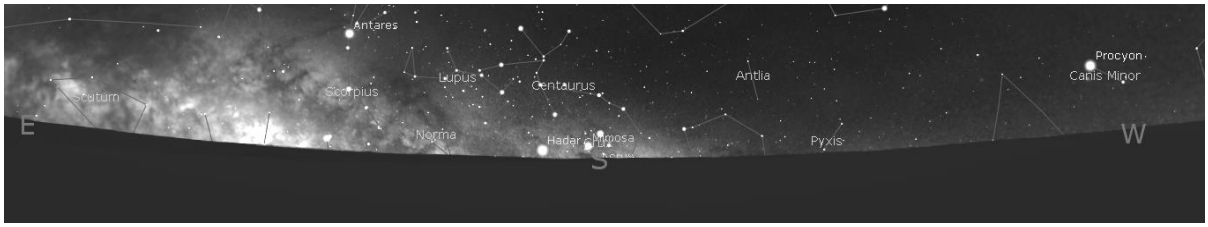


Figure 60. Crux culminateing in the southern sky

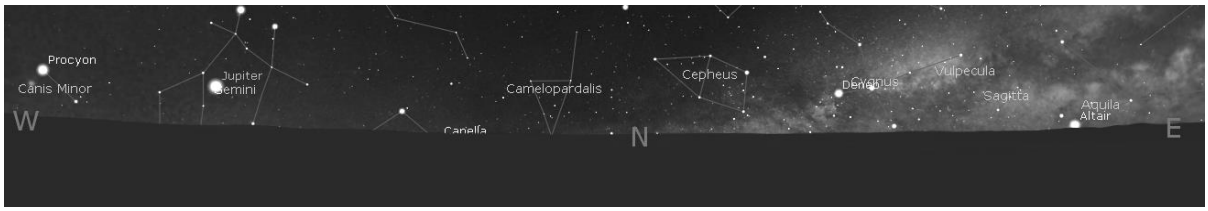


Figure 61. At the same moment Cassiopeia is at its lowest point in the northern sky

5. As Crux sets Cassiopeia rises, marked by the NE-SW entrances; at the same moment the band of the Milky Way links the two entrances, arching overhead (Figs 63, 64 and 65; Table 4).

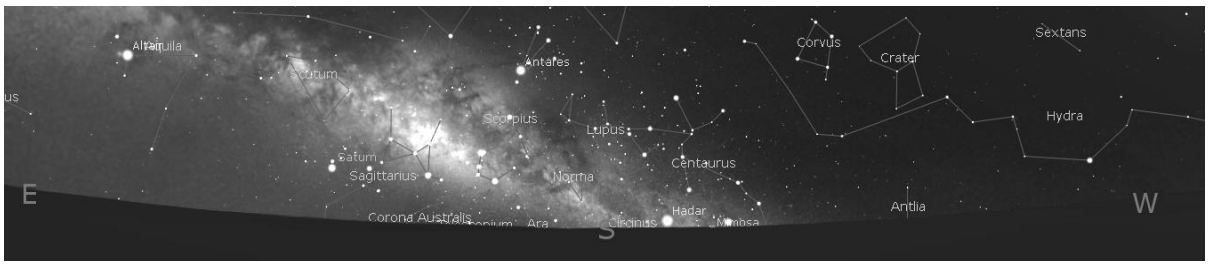


Figure 62. The setting of Crux aligned with the SW entrance

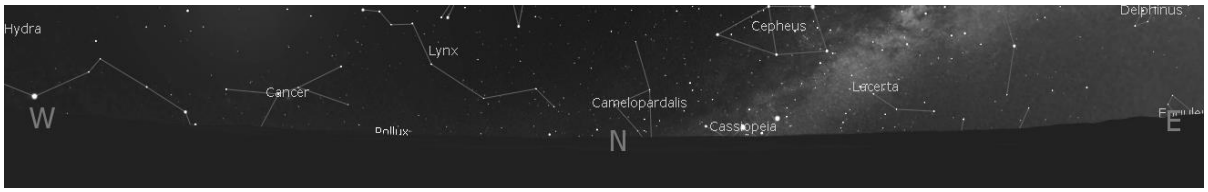


Figure 63. At the same moment Cassiopeia rises aligned with the NE entrance

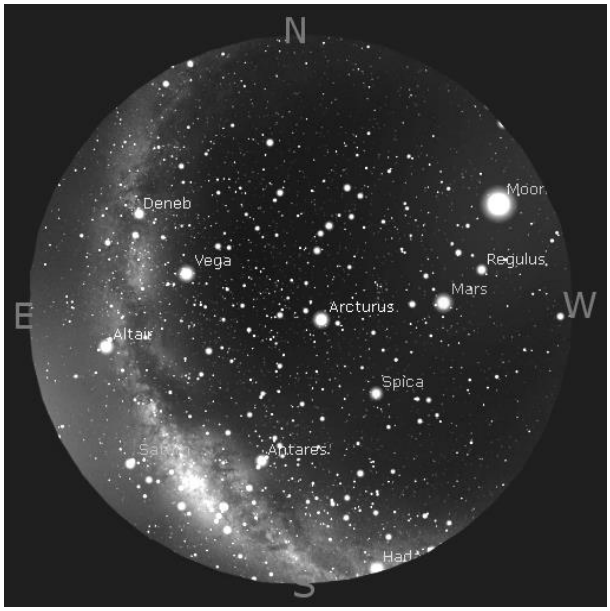


Figure 64. At the same moment the path of the Milky Way matches the alignment of the NE and SW entrances

6. In the spring the sun rises on Orion's shoulder as it crosses the Milky Way (Fig 66; Table 5).

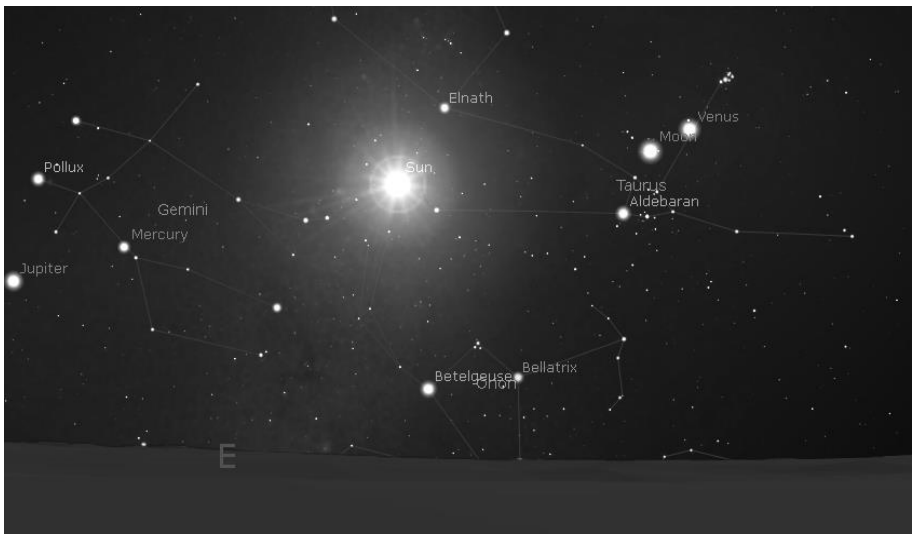


Figure 65. the sun rising in the 'Orion Point', the galactic crossing point, on or around May Day (nb. This is to illustrate the relative positions of these heavenly bodies rather than to illutrate what would be seen in actuality, which would be daylight with no stars visible)

The coincidence of the timings of these events suggests another reason why these stars over others might have been referenced – there is an interplay between the position of the Milky Way, of two constellations/asterisms within them, and with other referenced stars – most notably the corresponding setting of Orion, Sirius and Crux with the rising of Cassiopeia that may have been seen by ancient observers as 'meaningful' and worthy of emphasis.

These results show an identifiable pattern, one that becomes clearer if placed alongside the reconstructed P-IE myth. The following chapter deals with specific sites to elucidate the patterns found above. It will:

a) Provide further support for orientations towards the constellation groups outlined above

b) Suggest a timing of the observations and fit this within a wider ritual pattern

c) Provide supporting details in the form of artefactual assemblages associated with the sites

d) Bring in the reconstructed mythology to elucidate the alignments

e) Use comparative analysis of artefacts and symbolism to support this connection

Chapter Four: Site Specific Analysis

4.1 Stonehenge: sunrise and sunsets

The connection between Stonehenge and the solstices was first remarked by Stukeley in the eighteenth century (1740, p.56); the solsticial settings are usually attributed to phase 3a when, as Ruggles points out (1999, p.138) during the establishment of the sarsen monument within the hengiform enclosure 'a shift of several degrees in its axis [brought]… this in to line with summer solstice sunrise to the north-east and winter solstice sunset in the south-west.' He suggests the most plausible argument is that this alignment used the Altar stone to orient the viewer to the midwinter sunset, rather than the midsummer sunrise through the pair of stones (including the Heel stone) to the north-east. The earlier monument is not usually interpreted as referencing this alignment, but instead the majorly northern lunar standstill about 8° north of the later solsticial position (Parker Pearson 2012, p.44). However, it must be noted that the setting of the midwinter sun at 228°, though latterly 'fine-tuned', would still have been visible on entering the circle along the avenue through the NE entrance even in phase 1 (n.b. the phasing models referred to here are those standardised by Cleal *et al* (1995)).

Whatever its date, Ruggles' analysis of the likelihood of a midwinter orientation over a midsummer one is seconded by the orientation data obtained during this study. Only four of the sites (including Stonehenge) that form part of the study group showed midsummer sunrise alignments (see Table 1) while three referenced the midsummer sunset. This is 13% of all sites, with half referencing midsummer sunrise alone. This is in marked comparison to Midwinter solar alignments, evidenced in 27% of sites, with just over half of these (14% of all sites) aligned to midwinter sunset.

Such statistics suggest that although solstices were important enough to be referenced, they were not the sole *rasion d'etre* of the sites, especially when compared with the 75% of sites that show orientations on the northern and southern sky outside of the lunar/solar window, suggested in this thesis to be aligned on the Milky Way. Below it will be suggested that the latter may also have played a role in the positioning of the NE entrance at Stonehenge as an alternative to the northern lunar standstill/solstice alone.

This later refinement of the solsticial settings at Stonehenge needn't suggest that the alignment had not been important beforehand, though. The earliest site to reference a midwinter solar event is the Stones of Stenness, arguably the first henge of all. Here there is no reference to the sun in the position of henge entrances, but through alignments on local hills – specifically the double-hills of Hoy, which also frame the sunset as seen from the Ring of Brodgar, though this was built some time later (Fig 67)

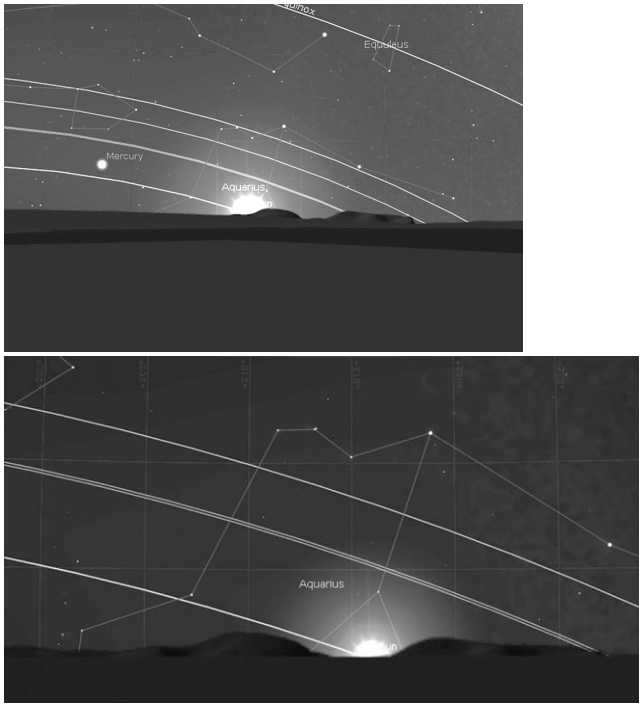


Figure 66. From the Stones of Stenness (left) and the Ring of Brodgar (right) the setting point of the midwinter sun occurs in conjunction with the twin-hills of Hoy. Note, the 'atmosphere' setting has been removed thes above images generated by Stellarium to show the background constellations)

In fact, looking at midwinter solar alignments we find that in many cases this solar orientation is provided by natural features, often twin-hills. At Bryn Celli Ddu henge the midwinter sunrise occurs at 135° between the 'double-hills' created by the Llanberis pass (Fig 68).

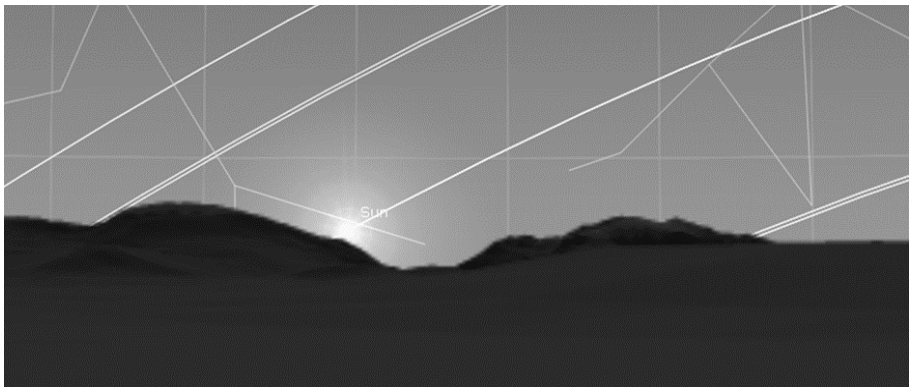


Figure 67. Midwinter sunrise from Bryn Celli Ddu occurs from between two peaks either side of the Llanberis pass

Similarly, the peak of Tan hill, one of the 'twin-hills' dominating this part of Wiltshire, is the setting point of the midwinter sun as viewed from the Sanctuary at Avebury (Fig 69).

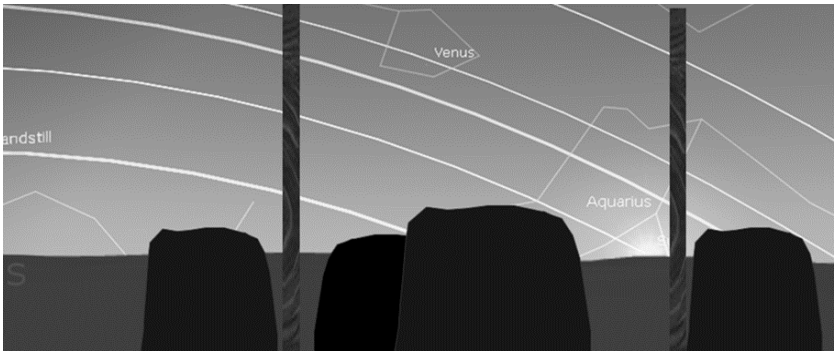


Figure 68. Although referenced by the placing of posts and stones, the setting point of the midwinter sun at the Sanctuary occurs on the peak of Tan Hill.

At Arbor Low, however, the rising of the midwinter sun is marked by the tumulus on the hedge bank at c 135°, and the setting by the position of Gibb barrow at 225°(Fig 70) - artificial features that were arguably created to act as the natural hills did at other sites. Indeed, the entrances of henges with banks either side, it will be argued, themselves mimic double-hills.

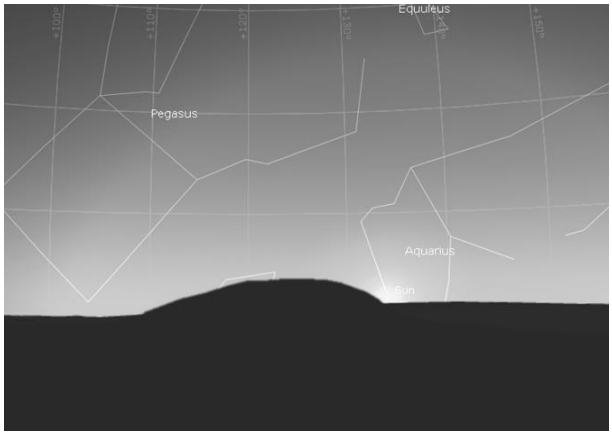


Figure 69. The rising of the midwinter sun at Arbor Low defined by the mound on the henge bank

Regarding other 'Midsummer' sites, Balfarg has a midsummer sunset aligned on a prominent hill, though also marked by the entrance bank (Fig 71).

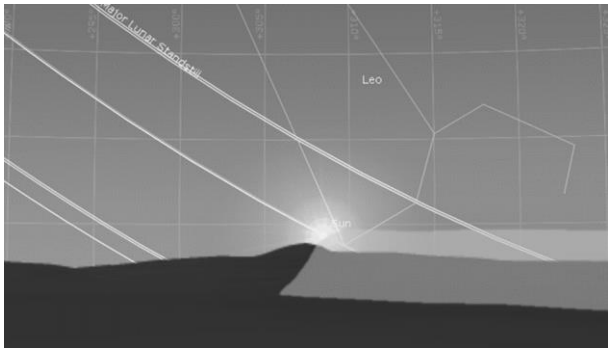


Figure 70. The setting of the midsummer sun at Balfarg over a prominent hill, but also referenced by the henge bank

Similarly, at Barclodiad y Gawres prominent hills to the NW defined the setting point in a manner that recalls, visually, the midwinter solstice sunset seen from the Stones of Stenness and Ring of Brodgar, involving hills viewed over a body of water (Fig 72).

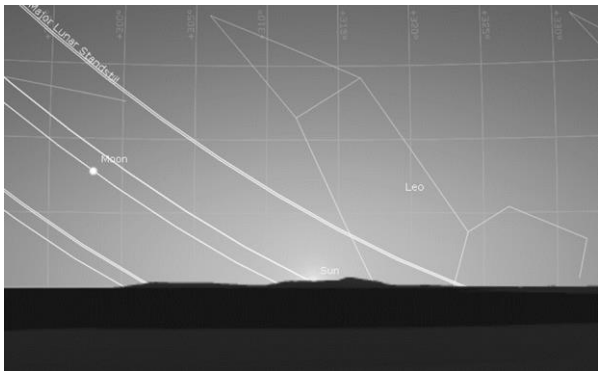


Figure 71. The setting of the midsummer sun at Barclodiad y Gawres over a prominent peak

The inference is that solsticial settings, most importantly those of the midwinter solstice, are associated with henge monuments and passage graves; there is a tendency, where local topography makes it viable, for these to be referenced in the surrounding landscape (arguably the original schema, as it is found at the Stones of Stenness), but where such landscape features are lacking, entrances or artificial 'hills' are constructed to view the phenomenon – though at Balfarg we see both (Fig 71). As no landscape feature existed on Salisbury Plain that might have acted as such a marker it may have been that the NE entrance (with associated Heel stone and its lost 'partner', *see* Darvill 2006, p.51) was constructed partly to this end, and that the phenomenon was intended to be viewed from the outside of the henge looking in, perhaps as a temporal marker for the start of certain ritual acts (which began after one had 'followed' the setting sun in to the henge – recalling the motif of Cu Roi's spinning fort whose entrance could not be found after sunset, (see 2.41)). The midwinter solstice, then, formed part of the 'shaping myth' of these monuments – yet it played only a part in a wider pattern that more directly concerned stellar alignments. The later fine-tuning of Stonehenge may have occurred when the stellar patterns were changing due to precession, or due to a religious change that saw solar symbolism eclipse the stellar, perhaps associated archaeologically with the arrival of the 'Beaker' traditions. Yet the midwinter date provides evidence for a ritual focus which we will see concurs with the evidence provided by the stellar alignments, to which we now turn, to examine what a participant entering the circle after sundown might have been witness to.

4.2 The Milky Way Alignments 1: Crux

What suggests the midwinter sunset alignment as viewed from the NE Stonehenge entrance is more than coincidental is the exact alignment of the other two entrances, found to the south and to the SSW. The southern entrance is not positioned precisely south but at c 168–178°. In 3100

BC the far-left of this viewpoint as seen from the centre of the circle would have marked the rising point of *alpha-crucis* (Acrux), the most southerly star in the Southern Cross, thus making the entire constellation visible (Fig 73). This remarkable group of stars (mentioned in part one) would have been a noteworthy sight. The SSW entrance stands between 198° and 202°, and anyone standing in the centre of the circle on midwinter morning viewing the setting point of the Milky Way would have noticed that Crux, followed by the bright stars Beta and Alpha Centauri, in the period c. 3100-2900 BC could be seen setting at about 200° SSW in the pre-dawn sky (Fig 74). Alignments to Crux have been suggested in the Neolithic before – most notably by John North who argued that two of the stars of Crux, Alpha and Beta Crucis, were referenced in chambers alignments and the strange lopsided design of Wayland's Smithy as well as in the angle formed by the outer posts of Fussell's lodge mortuary chamber (1996, pp. 32, 52); while Mann suggests that the siting of West Kennet Long Barrow was based on a view of the rising of Crux from Windmill Hill (2010, p.59).

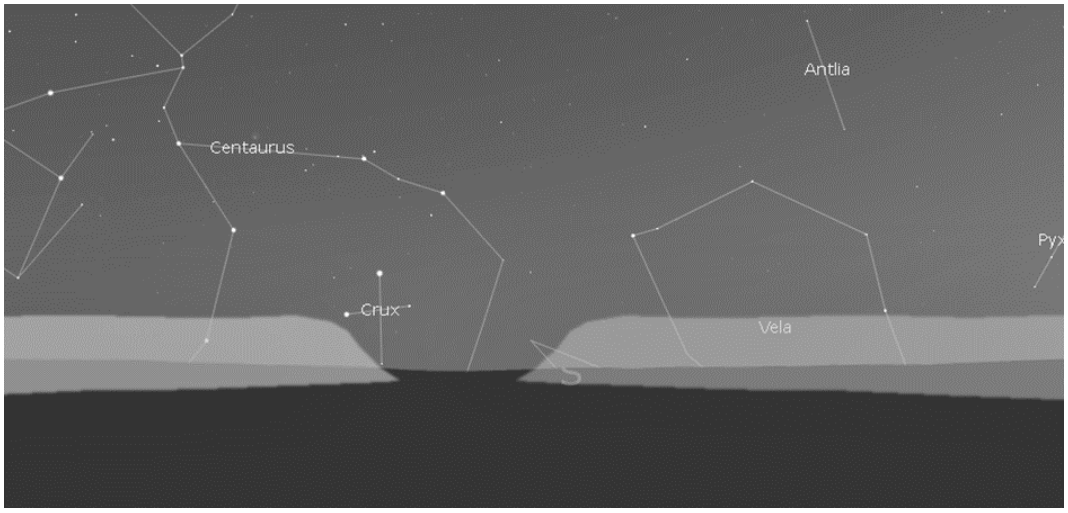


Figure 72. Crux rising through the southern entrance at Stonehenge c. 3,100 BC

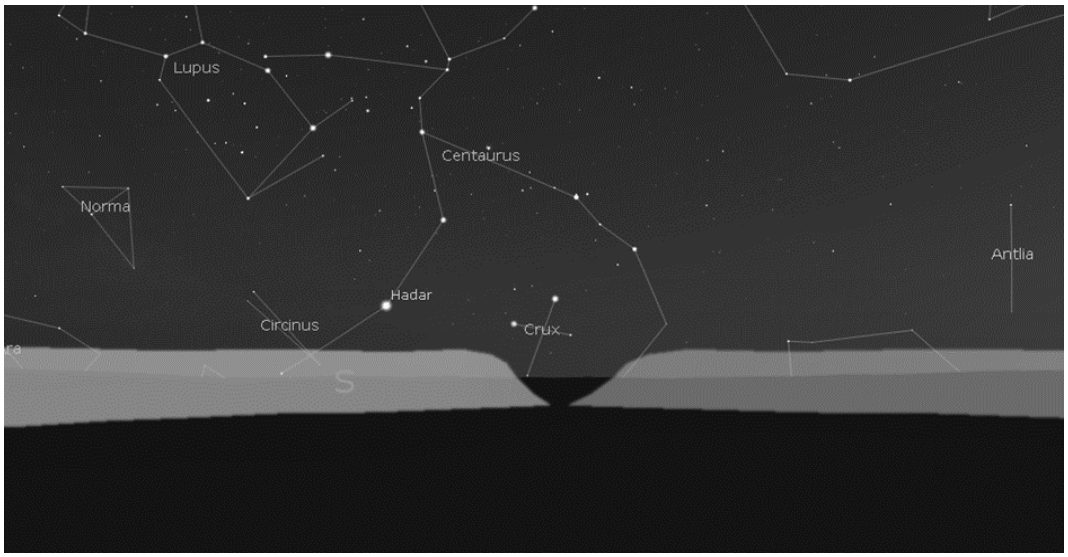


Figure 73. Crux setting as viewed through the SSW entrance at Stonehenge c 3,100 BC

At Midsummer the stars in the vicinity of Crux were not at all visible – they were with the sun, rising and setting in daylight hours. By the autumn equinox this was still the case – but shortly after they began to rise in the hours before dawn yet were obliterated by the sunlight before reaching their highest point in the south; accordingly, they were not seen to set. Come November and they rose in the early hours but didn't make it a full circuit before disappearing in the glow of dawn – it is only when we reach the winter solstice that they are seen to completely traverse the heavens –from horizon to horizon. This pattern remained until the spring equinox at which point the rising of the stars began to coincide with sunset, and from then on, the sun began to engulf them – by early summer they appeared only briefly at the end of the day before being swallowed by the horizon. And then by midsummer they had vanished from the night sky once again.

To reiterate, the winter solstice was the first time that this striking part of the Milky Way was first fully revealed to the observer after disappearing in the summer – and as it disappeared below the horizon the new-born sun of the new solar year would begin to lighten the eastern sky. The full night-sky journey of the stars of Crux, then, may have acted as a 'signal' of the midwinter solstice; the setting of Crux could be used as a marker of the rising midwinter sun. It is possible, then, that the SSW entrance at Stonehenge acted as a sight-line for this setting for this very reason. One might envisage a rite in which following the 'death' of the sun the night before at sunset, viewed along the NE entrance, the pre-dawn setting of Crux the following morning marked the renewal of celebrations as the new year's sun rose in the SE.

Is it coincidental that the two southern entrances marked the rising and setting points of this star group? The subsequent use of the entrances puts this in doubt.

Due to precession, the stars of Crux moved gradually eastwards over time, sinking lower in the sky before disappearing for good from the night sky after c. 2000 BC.

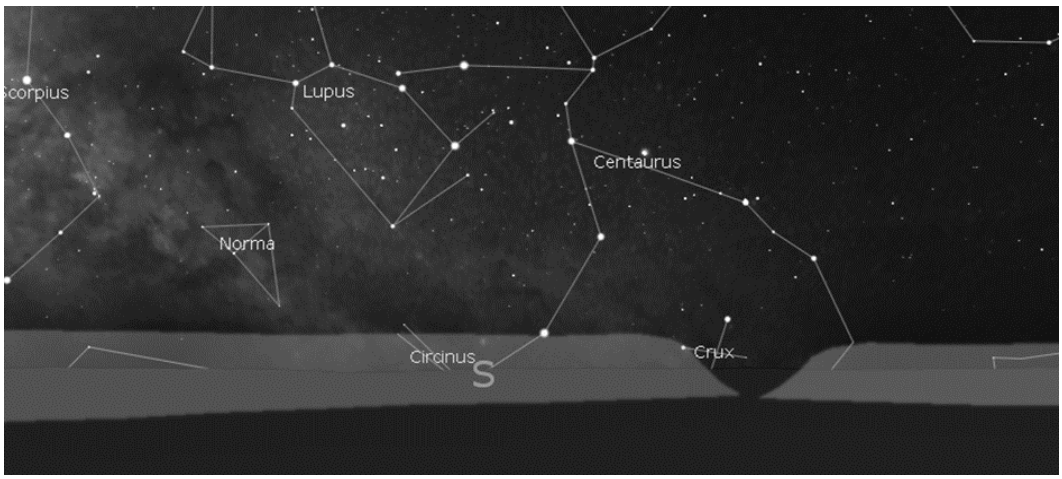


Figure 74. Crux setting as viewed through the SSW entrance at Stonehenge c.2600 BC

This shift in position of the stars may explain why at Stonehenge the SSW 'entrance' was 'closed' during phase 2 and the ditch was extended to cover the entrance. For by 2600 BC a viewer watching from the centre of the circle would no longer witness the setting of Acrux through the south-western entrance (or at least any markers which may have existed on the terminals of the ditch) as the star had moved too far to the south and east (Fig 75). However, the rising point remained in view, despite the loss of Acrux (Fig 76).

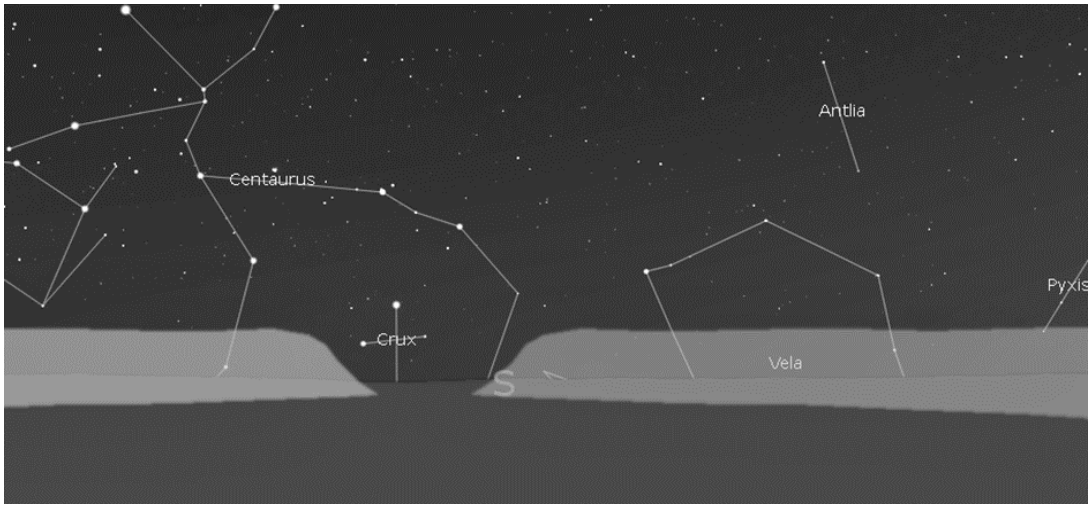


Figure 75. Crux rising through the southern entrance at Stonehenge c. 2,600 BC .

The observer could have moved to the west within the circle, away from the central spot, to continue to see the same stars setting for the last couple of hundred years before they finally vanished from the skies – but it seems that an alternative method was used.

4.21 The Stonehenge corridor

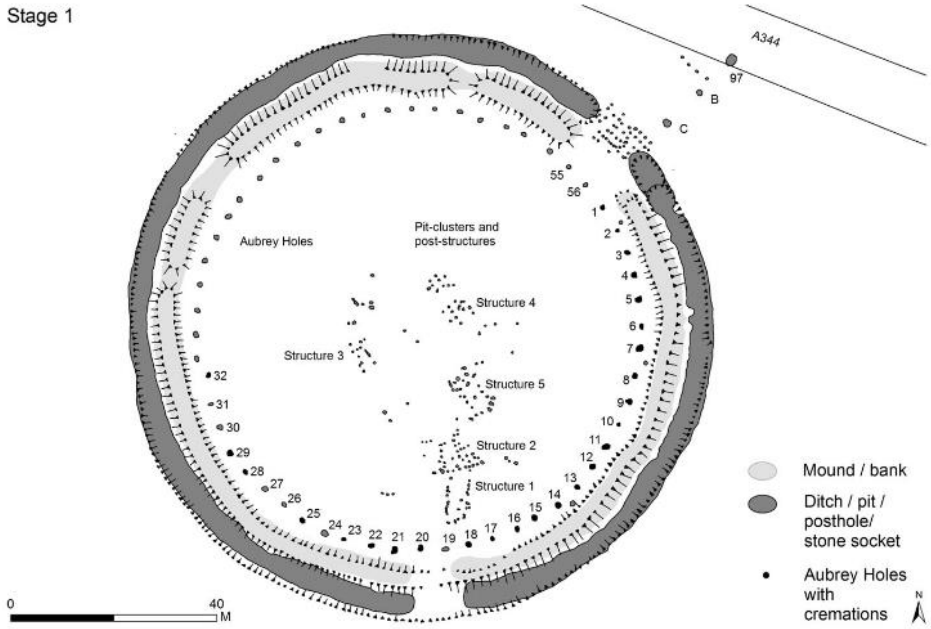


Figure 76. Post-holes associated with Stonehenge phase 2 (Darvill et al 2012)

Of the numerous post-holes identified within Stonehenge in Phase 2 the most recognisable feature is a corridor of posts that extend towards the S entrance (Fig 77). To my knowledge no one has attempted to argue why the corridor existed and why it was built at a strange SSW angle towards the S entrance. However, might it be that, like the SSW entrance, it was oriented towards the setting of Crux in the Milky Way?

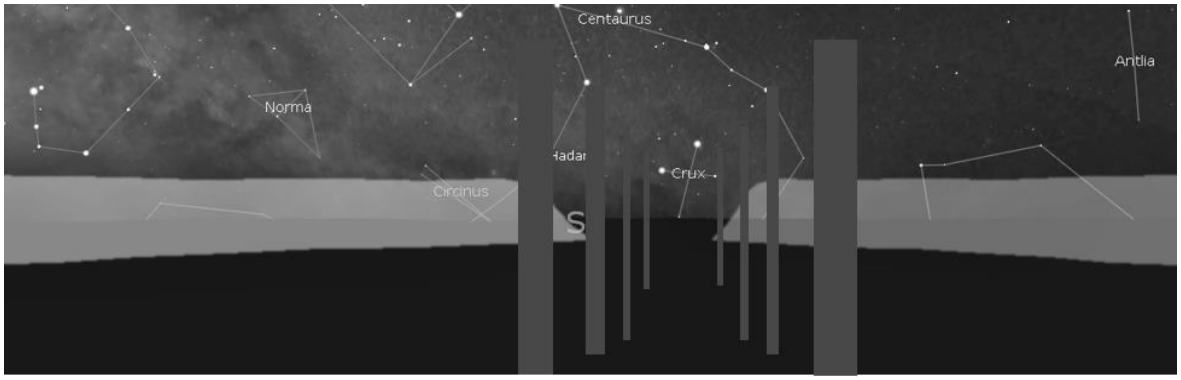


Figure 77. The southern 'corridor' of posts aligning on setting of Crux c. 2,600 BC

The angle of the corridor (190°) is such that it could have aligned on these stars (Fig 78) at a time when they had ceased to be visible from the centre of the circle (the dotted line in Fig 79 shows how this alignment would 'miss' the entrance if viewed from the old viewing position). Why, one might argue, had not the viewer just shifted position with respect to the SSW entrance? We do not know, but might it have been that this section of the circle was taboo, perhaps through an association with the west and death – as suggested by Darvill (1997)? Or did

the construction of central timber features in phase 2 mark the area as somehow restricted or out of bounds? Perhaps, then, the only choice was to view the stars from a more easterly position, necessitating the building of a viewing corridor through the S entrance.

With the rising of Crux, the Milky Way ringed the horizon (Fig 80), perhaps aping the chalk banks of the henge (see 5.4). With its setting the Milky Way aligned to the SSW and NE entrances (Fig 81).

In short, if the alignment of the Milky Way was important in the placement of the entrances, then the midwinter night sky would have afforded a view of the rising and setting points of this celestial band.

While these two features seem connected by the loss of view from one entrance and the establishment of a viewing corridor at another – this may be coincidence. However, the alignments occur on a meaningful date (from midwinter onwards) that coincides with the evidence of a midwinter solsticial orientation and are referenced in two separate alignments (rising and setting points), and in a post-hole alignment whose difference in angle from the original SSW entrance can be explained by the precession of the relevant stars involved in the alignment. The alignment may well be there, but to qualify it scientifically we need to see if the pattern is repeated at other sites.

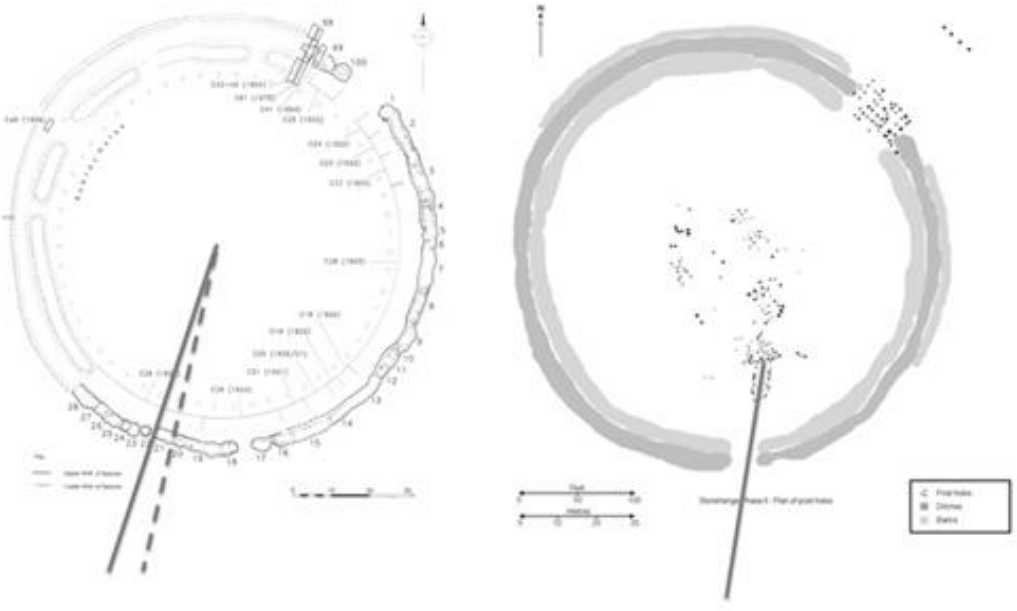


Figure 78. The alignment of the 'southern corridor' of posts (right) provides a view of the setting of Crux that would no longer have been visible through the SSW entrance (left) due to precession having 'moved' these stars (after Cleal 1995)

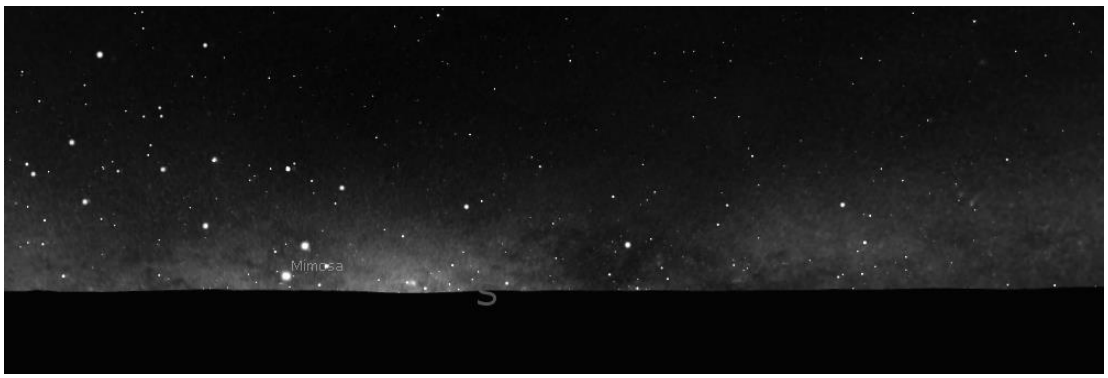


Figure 79. With the rising of Crux the Milky Way ringed the horizon c.3000 BC

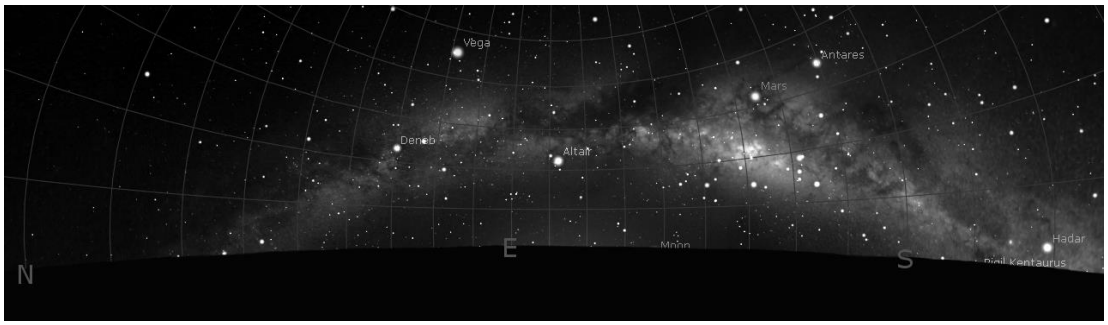


Figure 80. The placement of the entrances at Stonehenge afforded a view of the rising and setting points of the Milky Way in the pre-dawn sky at midwinter c.3000–2500 BC

Mann makes a convincing argument that Crux and neighbouring stars in Centaurus played a major part in the orientations of the Avebury henge – most notably the primary axis of the site and sight-lines provided by the D-feature to the rising point (166°) of Crux, which from Avebury would be seen to rise from the base of, and climb, Waden Hill (2011, p.112) (Figs 82 & 83).

Figure 81. 155° – rising of Gacrux (Gama Crucis) over Waden Hill c.2800 BC

Figure 82. Rising of d-crucis over apex of Waden Hill at 164° as seen from Avebury Henge c.2800 BC

Mann also suggests that the setting of the same stars when viewed from the obelisk c.2500 BC was at the point of the future Silbury Hill (Fig 84), and that the latter, whose form mirrored the shape of the top 'peak' of the stars of Crux that were gradually being lost to precession, was an analogue of them.

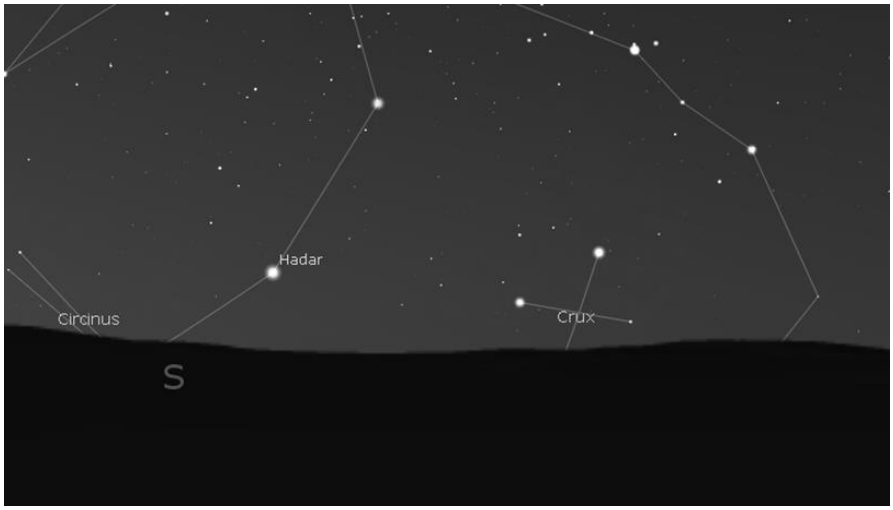


Figure 83. Setting of Crux over Silbury at 194° as seen from Avebury Henge c.2800 BC

4.22 Blocking or emphasis?

However, such ideas concerning blocking of entrances and replacing lost alignments might be an oversimplification. Silbury Hill was not built in one go, but over hundreds of years; and the 'blocked' entrance at Stonehenge may have acted not so much as a closing of the entrance after the loss of an alignment but as a signifier - a mound of earth representing a hill such as the tumulus on the henge bank at Arbor Low. At Knowlton a SW entrance aligned to the midwinter sunset was similarly 'blocked' (Fig 85) which suggested to the excavator that

> 'From an archaeological perspective, the most interesting aspect is the partial blockage of the southwestern entrance way preventing a clear view to the centre of the monument from the outside, and also channeling visitors around the edge. It is noteworthy that this same segment of the bank is disproportionately high, as if to accentuate the blocking effect. The possibility that this was a deliberate device used in the ordering of ritual within the henge seems highly appealing. In contrast the arrangement of bank and ditch at the southeastern

entrance allows a clear line of site into the henge.' (Source: https://csweb.bournemouth.ac.uk/knowlton/knc95a.htm).

This disproportionally high blocking is more suggestive of an artificial mound such as at Arbor Low where the nearby Gibb Barrow defined the midwinter sunset and the bank-tumulus its rising – for the 'blocking' was not made to blend in with the rest of the bank – but almost to attract attention to it (Fig 85).

The net effect would not have been to block the sight of the setting midwinter sun, but to accentuate it by having it set between the new 'mound' and the old bank. If this 'blocking' was not original, it may have been an attempt to improve on the symbolism of the 'hills' in to which the sun set. It is possible that Silbury, then, as with the 'blocked' SSW entrance at Stonehenge, was placed to accentuate the setting of the heavenly bodies involved in the alignment, in this case Crux, rather than closing what had become 'redundant' doorways; after all, there seems no point in closing an entrance aligned to the midwinter solstice at Knowlton as the solstice was not effected by precession – nor would it seem logical to block one entrance to obscure events going on inside the henge if the other entrances remained open with a clear view of the interior.

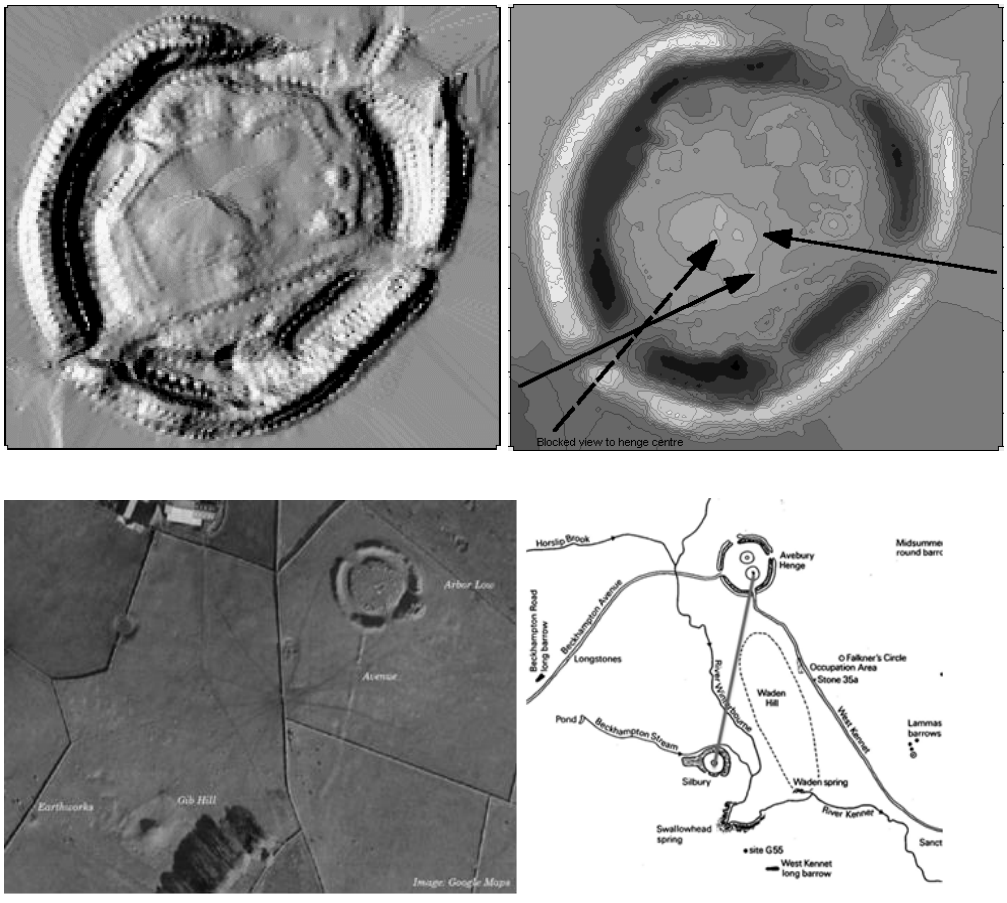


Figure 84. The 'blocking' of the SW entrance at Knowlton Henge (top left) has been suggested as inetnded to obscure the view of the centre of the henge (top right) (Source: Bournemouth University); but the placement of the 'blocking' mirrors that of artificial mounds at other sites, such as Gibb Barrow at Arbor Low (bottom left) and Silbury Hill at Avebury (bottom right)

Such mounds, then, played the role where natural hills, such as those of Wittenham clumps that form an alignment with Crux as seen from Dorchester-on-Thames, were lacking (see Appendix 2).

The use of mounds/hills to provide alignments is paralleled with the method of using internal/external markers for the same purpose, something seen at the Sanctuary at Avebury.

The Sanctuary was constructed in the form of an off-set cruciform circle of stone settings and timber posts – later joined to Avebury via an avenue which joined the Sanctuary on the NW side; of interest, given the SSW location of 'blocking' phenomena and hills, is an anomalous stone in the SSW set within an arc of 4 posts that accentuate this portion of the monument (Fig 86). If Pollard (1992) is correct and the stones and posts were contemporary then there would have been very narrow sight-line from the centre of the monument out towards the SSW stone, too narrow to have been a physical entrance. The alignment of the centre of the SSW stone from the centre of the monument is 210°, with sight-lines afforded to the east of the stone at 205° and west at 226°.

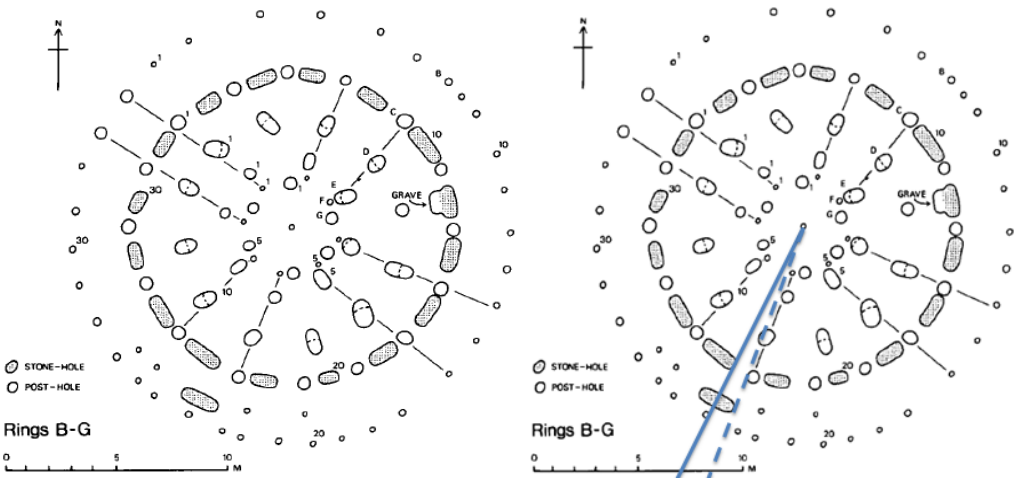


Figure 85. The orientation of the SSW stone at the Sanctuary suggests a similar orientation to the 'blocking' mounds mentioned above, and aligns on the stars of Crux (source: Sims 2016)

If we were looking at the gap between inner stone ring and outer stone, as illustrated by the dotted line in Fig 86, the alignment of the former gap would be on the setting of Crux at the date which Pollard suggests the monument was constructed, c. 2600 BC (1992, pp.213—26.). As noted above, the other orientation would fall on the setting sun at midwinter – both positions defined by the spaces between posts and stones either side of the anomalous stone, and the peaks of Milk and Tan Hill beyond, the highest peaks in Wiltshire (Fig 87).

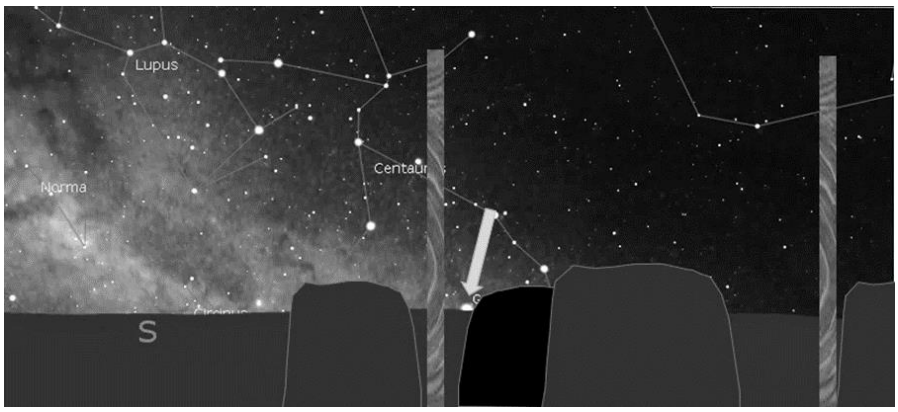


Figure 86. The setting of Gacrux on the peak of Milk Hill as seen from the Sanctuary is defined by the stones and posts of the structure c.2600 BC

The possibility remains, however, that Pollard may not be correct about the sequencing, and that the more prevalent idea of the sanctuary as developing over time may be correct, beginning around 3000 BC (Malone 1989, p.84). In this case the SSW stone may either have been part of the original monument or placed on the site of an earlier marker. In 3000 BC Gacrux (*Gamma Crucis*) set at 210°, matching the alignment of the stone from the centre of the monument. Such an alignment would suggest why the anomalous stone was sited here and why this SSW segment of the sanctuary contained an arc of posts not found elsewhere. Something about this orientation clearly interested the builders. Similar anomalous stones appear at Woodhenge where stone-holes have been found within the wooden monument, which, too, align with the setting of Crux (see Appendix 2 and 4.51) Likewise, Site IV at Mount Pleasant in Dorset shows the same SSW alignment of an internal stone setting or cove within concentric timber circles (Fig 88).

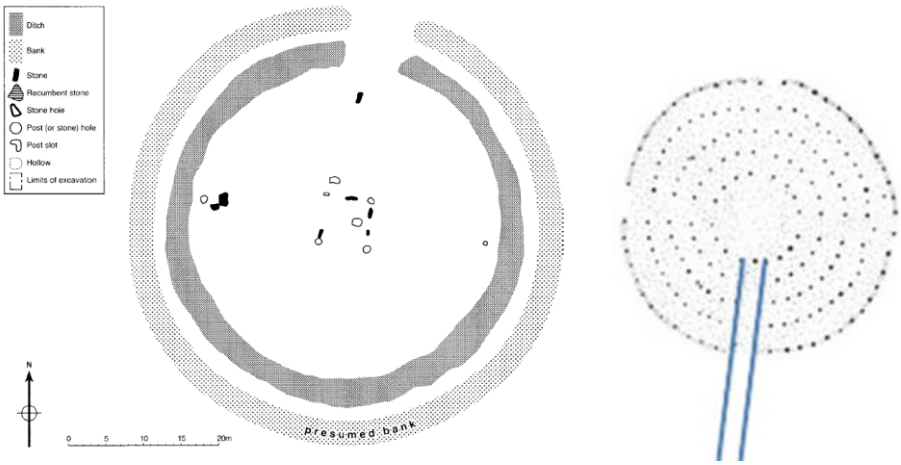


Figure 87. The cove at the centre of Mount Pleasant Site IV suggests an alignment southwards is being referenced in its orientation (after Wainwright 1979)

Site IV was excavated by Wainwright 1979, who uncovered 5 concentric rings of post-holes inside the ditch (and presumed bank) aligned, as Wainwright says, ‘north, south, east and west,

which divides the rings in to four quadrants.' (1989, p.72). Yet it is clear from the plans that the structure is 'skewed' a few degrees off the cardinal points. Many similarly 'skewed' orientations are routinely recorded as 'cardinal' by archaeologists (Avebury, for example). The alignment at Mount Pleasant is around 184-195 ° SSW. Furthermore, the 'cove' of stones at the centre of the site (in Wainwright's phase 2, though Pitts believes the stones were contemporary with the timber circles) suggests that this skewed axis points to the SSW rather than due NNW, for this is the direction the cove faces - from the centre of the monument one's view NNW is obstructed by the back stone of the cove.

Radiocarbon dates from site IV ditch suggests a floruit between c. 2450-2200 BC (average based on Pitts, 2001, 332). Wainwright dated the posts to c. 2200 BC – which would have afforded a view along the axis of the top of Crux setting at 194° (Fig 89).

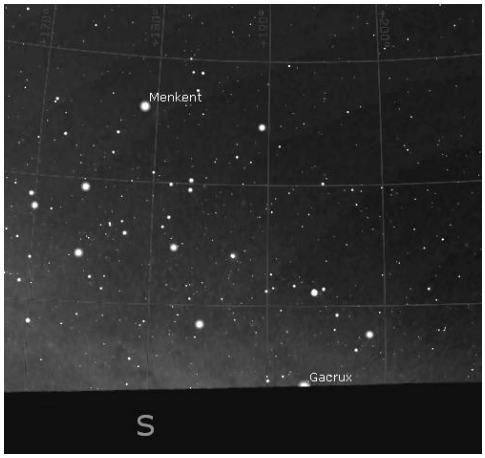


Figure 88. Gacrux setting at 194° as seen from Mount Pleasant Site IV cove c 2200 BC

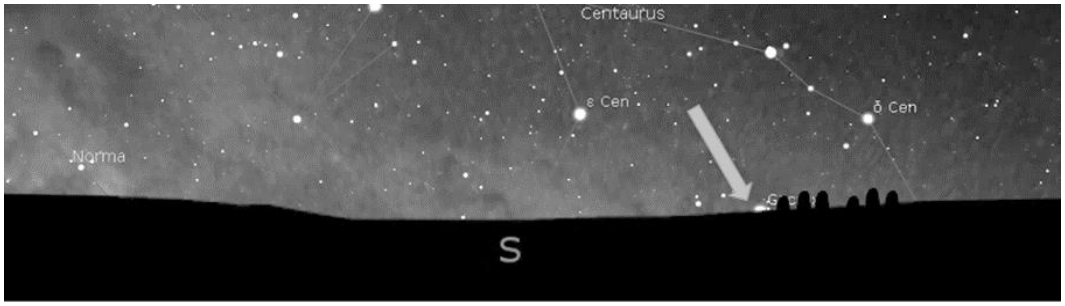


Figure 89. The southern circle at Stanton Drew may have offered an alignment on the setting of Gacrux c.2000 BC

In some cases, however, external stones provided the sight-lines, such as at Stanton Drew (Fig 90), another site consisting of stone settings and concentric timber circles. However, such sites are in the minority – the majority of those with 'Crux-oriented' entrances do so through standard banked entrances, such as seen at Stonehenge, or distant hills. 60% of henges studied in this thesis showed orientations on the rising or setting of Crux, yet this number may originally have been higher, for if we take in to account sites where no entrances point towards

Crux yet stone settings indicate interest, such as the Sanctuary, Woodhenge (see 4.51), Mount Pleasant Site IV, and as we will see, Bryn Celli Ddu (see 4.45), it may be that other sites contained such features but which have so far remained undiscovered due to absent, partial or inferior excavation. 34% of sites align to the rising of Crux and 31% to the setting – only 3 sites, that is 7% of our sample, show both, two of which, Avebury and Marden are 'super-henges' (the other is Coupland). So, in most cases it was a case of 'either/or'. Reasons for this will be examined later (4.33). Of the 60% of sites with SE or SW alignments over two-thirds share these with alignments to the NE and NW, and it is to the northern sky we now turn.

4.3 Milky Way Alignments 2: Cassiopeia

The small henge enclosure at Fargo plantation (Fig. 15) on the west side of the Stonehenge Greater Cursus consists of a small earthwork with two 'entrances' aligned NNE-SSW. The width of the entrances yields a wide arc of possible sight-lines, yet two post-holes within the structure (which has not been dated – the only clue to date is remains of Peterborough Ware pottery in the ditch, which suggests a date of up to 2600 BC) are aligned at precisely 195°. The site also contained remains of Beaker pottery associated with an inhumation grave – yet these must be later than the original structure based on the Peterborough ware evidence. The ditch also contained a fragment of bluestone.

If the posts acted as sight-lines for a stellar alignment then it can only have been aligned on stars appearing in the NNE or SSW, as only 2 posts were present. The view through the SSW entrance presents a clear sighting of the setting of Crux (Fig 91).

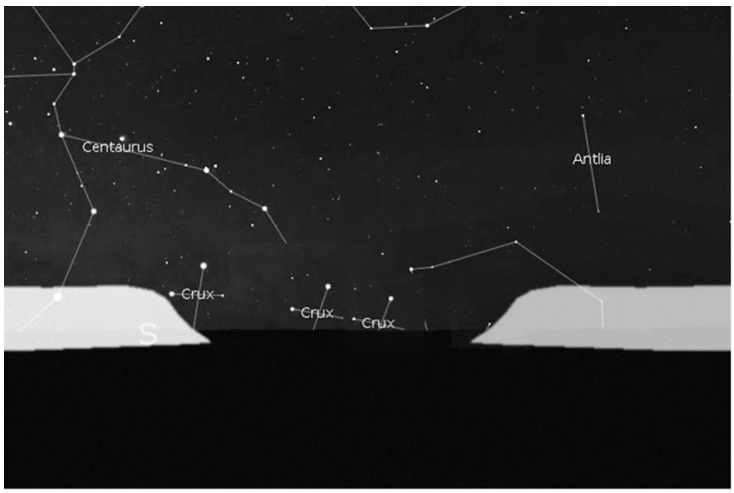


Figure 90. The setting of Crux as seen from the southern entrance at Fargo Henge c.2600 BC

Obviously, one could argue that the alignment is to the NNE – defined by a wide entrance of 352°–035° here the star Deneb in Cygnus rises at about 20° E of N – yet more dramatic in terms of pattern is the rising of Cassiopeia which 'sits' on the horizon when Crux has fully set (Fig

92). An analysis of all NNE entrances gleaned from the gazetteer shows a Cassiopeia alignment is the most likely reason for this orientation – present in all examples studied save the Ring of Brodgar where, due to the latitude, Cassiopeia does not set – yet the orientation of the entrance points near this constellation within the setting Milky Way.

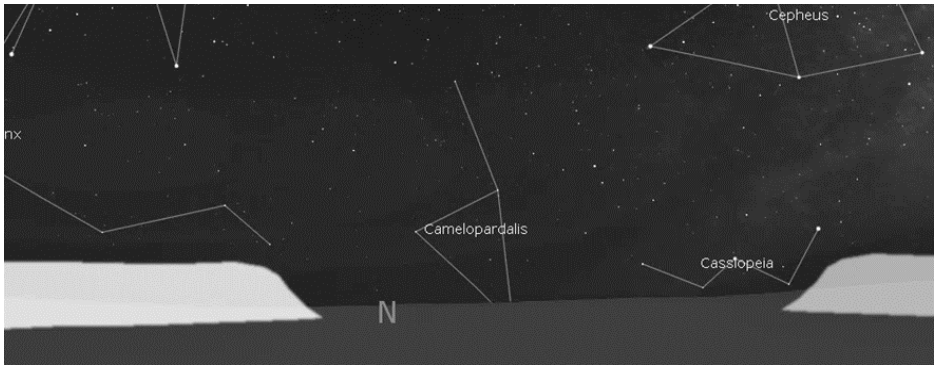


Figure 91. The rising of Cassiopeia as seen from Fargo Henge c.2600 BC

4.31 Stenness and Brodgar

Such an alignment is suggested at the Stones of Stenness, whose only entrance points north. It is usually suggested that this is aligned on the settlement at Barnhouse, yet the visual impact of Cassiopeia set between the two northern flanking stones cannot be dismissed (Fig 93).

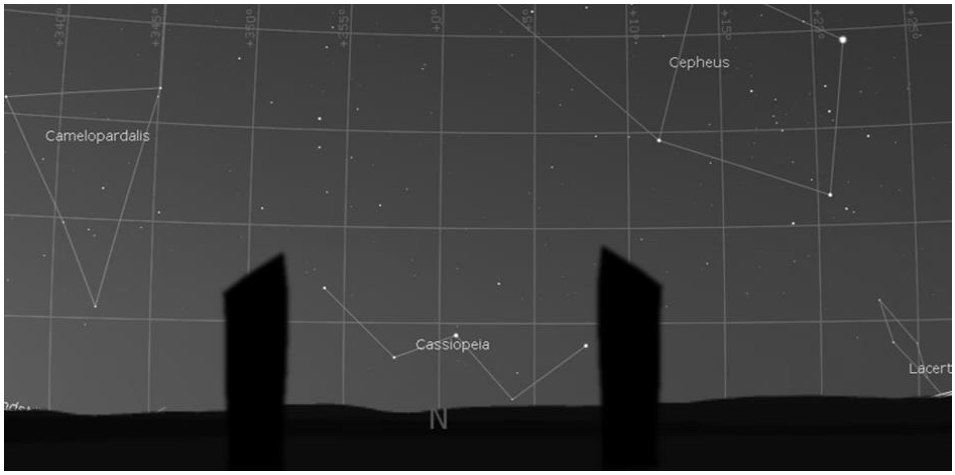


Figure 92. Alignment of the entrance at the Stones of Stenness with Cassiopeia c.2800 BC

Such an alignment attains greater value when it is realised that Cassiopeia had, when viewed at an earlier date and from further south, always been seen to set below the horizon. The combination of latitude and date meant that it was first in Orkney of all the places in the British Isles, that this northern constellation failed to set. Egyptian astronomy and religion makes much of this difference between changeable southern stars and the ‘undying’ (that is un-setting) northern polar constellations (Krauss 2001, p.21). Of shared importance was the fact that this raising of Cassiopeia also saw a diminishing of Crux, which disappeared below the horizon so

that from Orkney it would not be seen rising again after this point. Instead, as will be discussed later, the bright star Sirius is referenced in alignments in its place. If a similar symbolism existed in British Neolithic beliefs this change in the status of Cassiopeia and Crux would have been deemed significant. But Stenness is an anomaly with regards settings. The more usual pattern was of a dual-entranced henge (class II), of which key examples are the Ure-Swale grouping.

4.32 Thornborough and the Ure-Swale henges

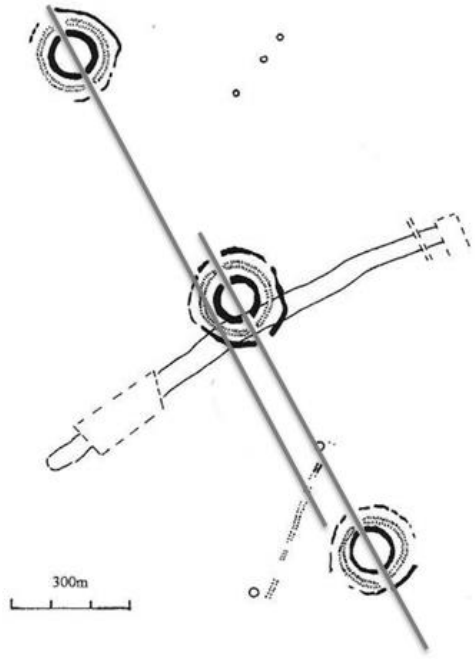


Figure 93. NW-SE alignments between the three Thornborough Henges (after Harding 2006)

The Thornborough henges in Yorkshire are aligned NNW to SSE, at about 150°–155° (Fig 94). While much has been made of the apparent layout of the three henges as analogues of the belt-stars of Orion, in a recent archaeoastronomical study, the authors concluded that 'Rising stars framed by all three southern henge entrances throughout the period 3000–2000 are Mirzam and gamma Centauri' (Harding *et al* 2006, p.33)

Gacrux rose at c. 155° in and around 3100 BC – and continued to be sighted through the henge entrances all through the third millennium. But more weight is given by the authors in the analysis to the appearance of Sirius and Orion through the entrances, prompted by the similarity of the henge layouts to the belt stars of Orion; that the entrances would have framed these belt stars on the rising of Sirius is impressive – however, the belt stars appear elevated above the entrances, while every indication is that ancient astronomers (in Egypt for example, with the 'decan' system (*see* Belmonte 2002, p.43)) were more interested in marking horizon events than in culminations and events higher up in the heavens; Silva remarks how the horizon's

importance stems from its role as the ‘mediator between the skyscape and the landscape, between the earth and sky.’ (2015, p.3), thus risings and settings being the most frequently encoded phenomena in monumental orientations. That doesn’t mean other orientations, on culminations for instance, weren’t of interest – just that they tended not to be referenced in monuments. As stated earlier, however, the use of the circular form that is only apparent when seen from the air, might give some credence to a system where the layout of sites was intended to be seen from above. If this was the case, then Harding’s suggestion that the Thornborough henges resemble Orion’s belt as seen from above may not be without merit.

Given that only two stars appear in the analysis as being referenced by all southern henge entrances, and that one of these is the bright red star Gacrux (Mirzam, the other, is a much less prominent star, found next close Sirius) suggests we look beyond the solely Orion imagery and see Thornborough as a site that references the rising of Crux within the Milky Way (Fig 95). The Orion correlation suggested by Harding may provide a hypothesis for the orientations of the SSW but not the opposite entrance. However, if Cassiopeia is being referenced, we see a clear fit (Fig 96). Here the setting of Cassiopeia occurred at the same time as the rising of Crux, when the Milky Way was ringing the entire horizon. It stretches credulity to suggest if the builders of the henges were interested in the sky that this striking pattern went unnoticed and unmarked.

Connected to Thornborough through a shared design (class 11a type henge), orientation and locale are three other henges in the strip of land between the Ure and Swale rivers, plus one slightly further south near the river Wharfe. These are the henges at Nunwick, Hutton Moor and Cana Barn respectively (Fig 97). Their similarity and relative proximity to the Thornborough henges suggests they were contemporary, or perhaps slightly later, being an off-shoot of the major, formative complex at Thornborough. The alignments of the henges are similar, but not identical to those of Thornborough; Nunwick is oriented on *c* 166°, Hutton Moor *c* 169°, and Cana Barn *c* 172°. These all fit an alignment on the rising of Crux and the setting of Cassiopeia as the Milky Way lay on the horizon – but also (if these were winter sites, as suggested for Stonehenge) the Milky Way would have joined both entrances as a linear band in the sky about the time Sirius was visible through the entrances, not long after sunset.

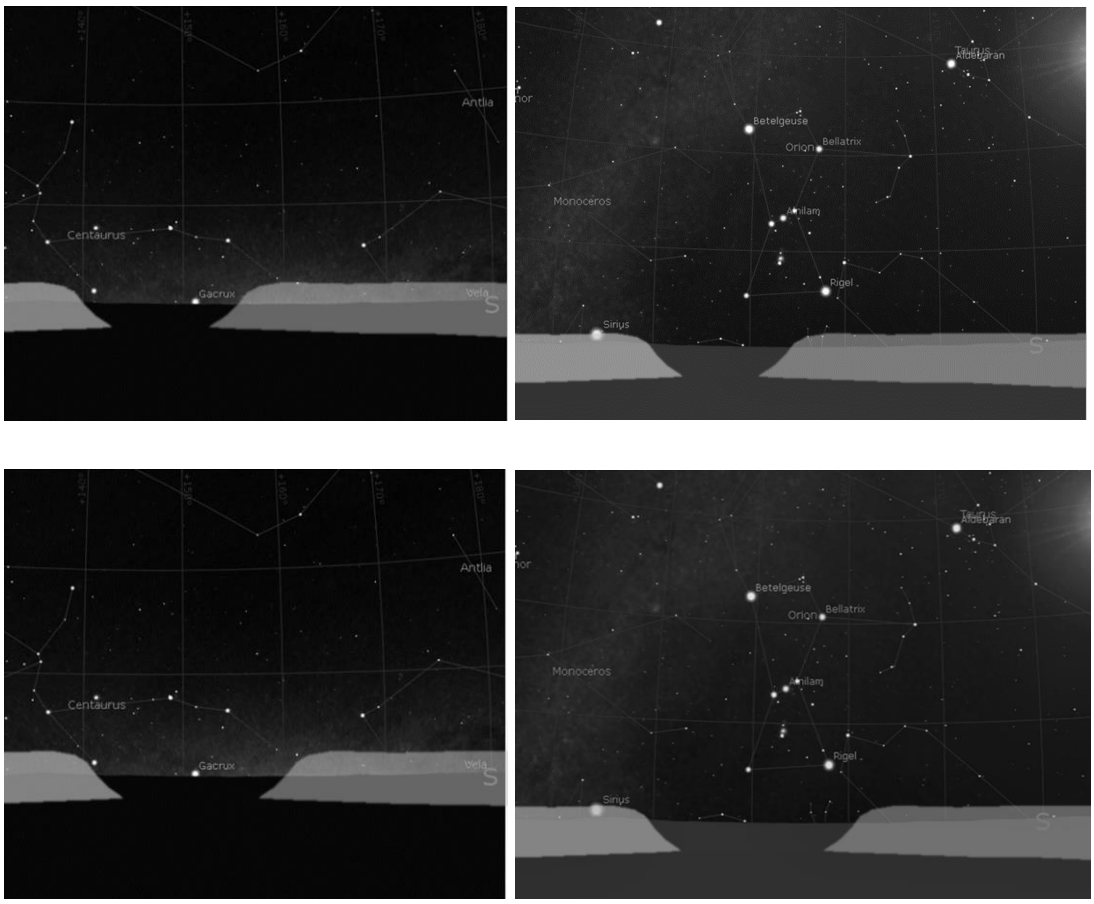


Figure 94. The rising of Gacrux between the banks of the SE entrances of Thornborough N and M c. 3500 BC (top and bottom left) present a more probable alignment than the postulated alignments with Orion as discussed by Harding (top and bottom right) although both alignments may have been being referenced

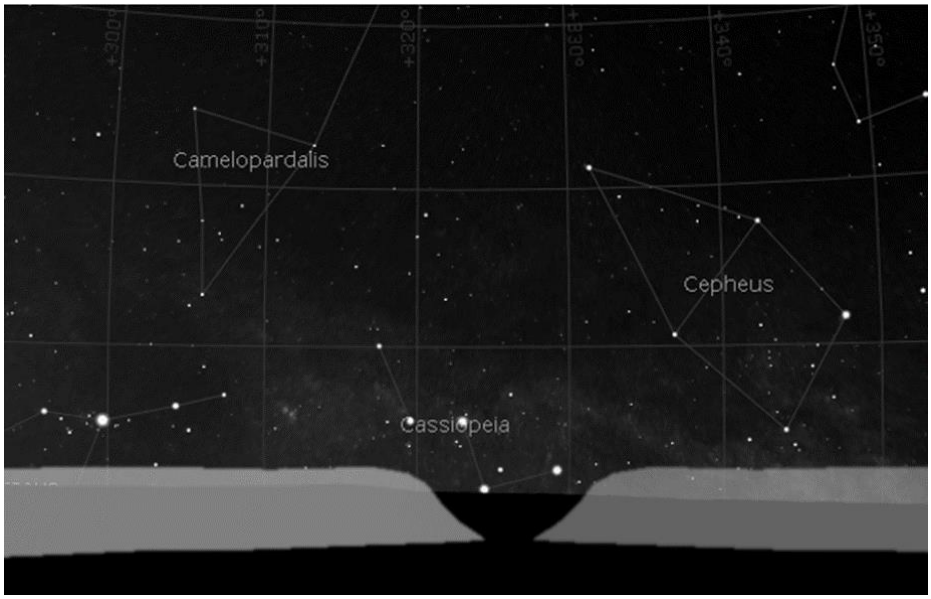


Figure 95. Thornborough South aligned to the setting of Cassiopeia c.3500 BC

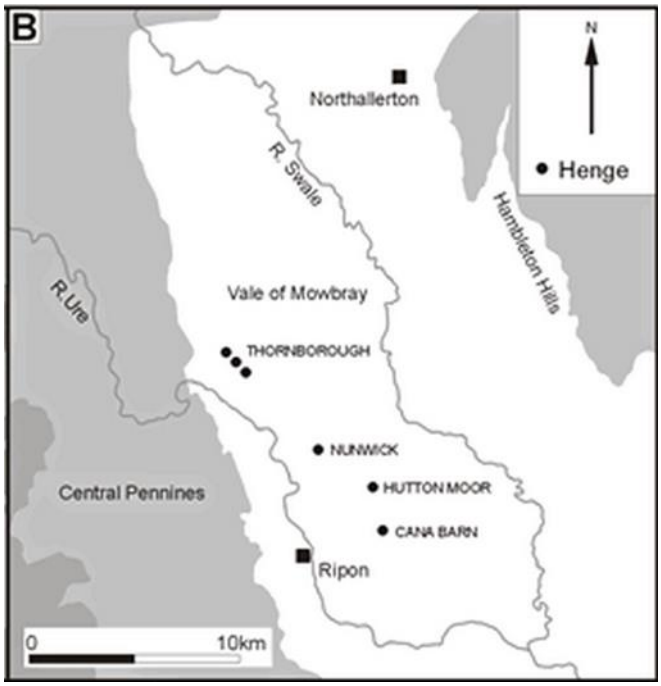


Figure 96. The Ure-Swale henge group (Harding 2013, p.87)

Harding suggests all these monuments were linked by a central plan (2013, pp.87 and 92)– yet fails to answer why, if the plan was as we see at Thornborough - to frame the belt stars of Orion as Sirius rises - none of the other sites factored this occurrence in their design. Instead, what does remain constant is the siting of the entrances in relation to Crux and Cassiopeia, an alignment shared with 40% of the sites in our study sample. The only other class IIa henge to be found outside the Ure-Swale corridor is that at Dorchester-on-Thames, in Oxfordshire, whose orientation to 168-70°, and general design, make it a clear off-shoot from the Thornborough group.

The orientation to Cassiopeia, as for other heavenly bodies already discussed, was not limited to the earthen henge banks, such as we see at Avebury and Knowlton (Fig 98) for instance,

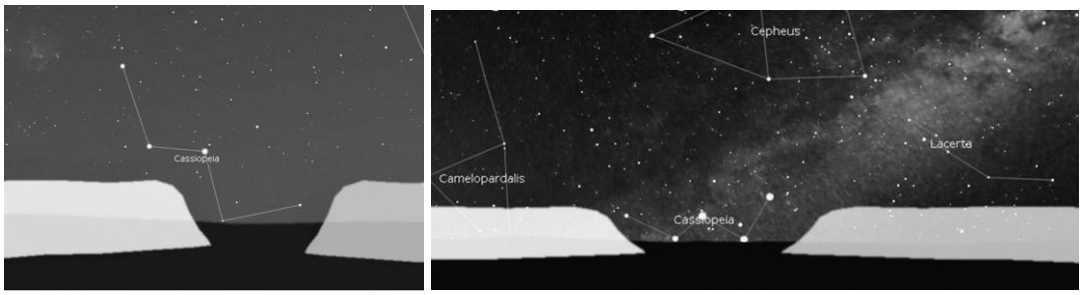


Figure 97. The setting of Cassiopeia as seen from Avebury c. 2800 BC (left) and Knowlton c.2600 BC (right)

but found expression through alignments to nearby hills. Indeed, the passage of Cassiopeia across such hills as it touched the earth, appears to have been an important visual trope that may

have defined the siting of certain monuments. At the Bullring, for example, the rolling of the middle star Navi across a northern hill would have been an impressive sight (Fig 99).

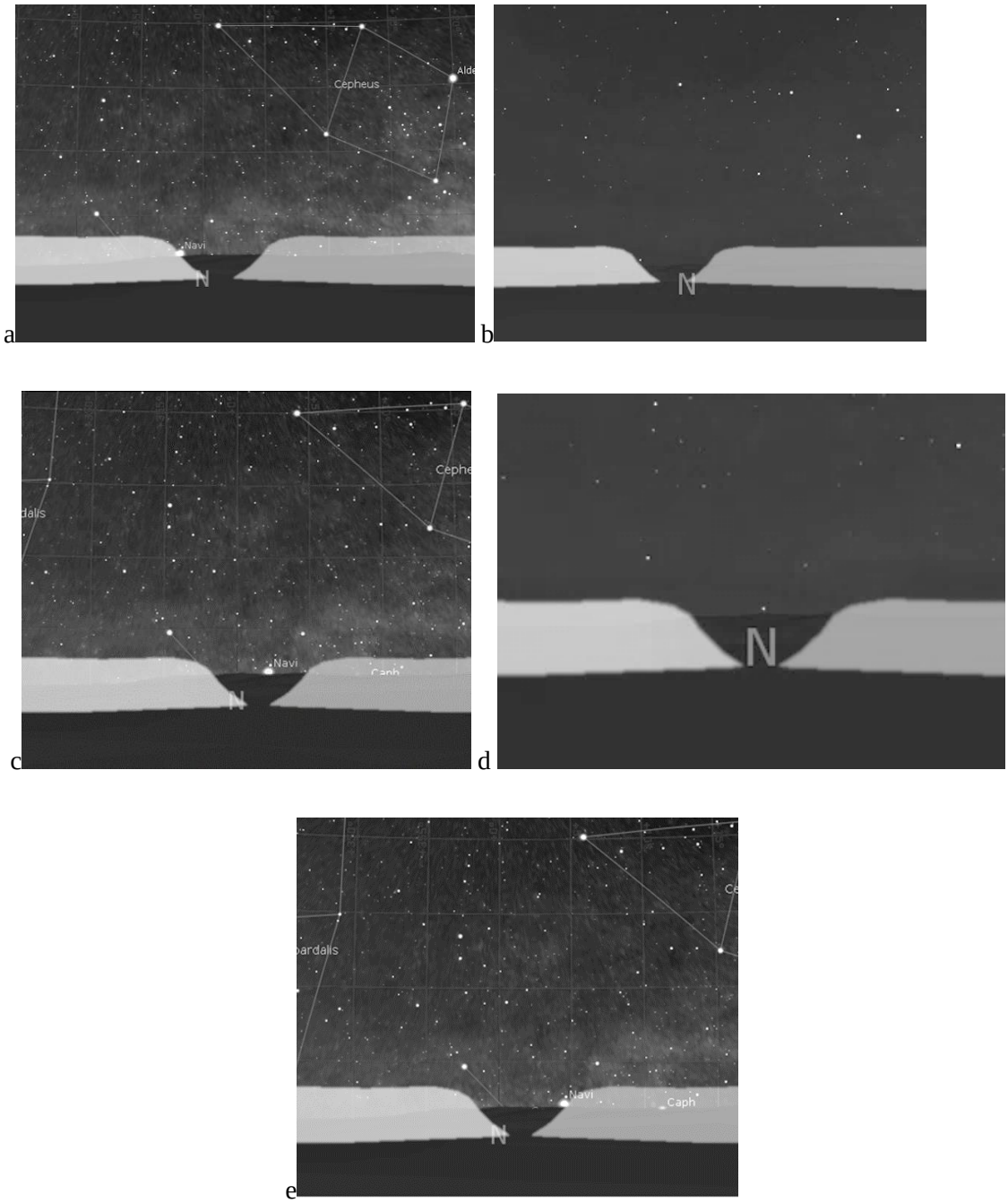


Figure 98. The northern entrance of the Bullring henge offered a view of Navi in Cassiopeia 'rolling' along the hill to the north c.2200 BC. For clarity images a, c and e are shown with the atmosphere setting in Stellarium switched off, which yields a better image for publication of small images. Images b and d show how the sky would appear in actuality, showing the stars of Cassiopeia are still visible on the horizon (refraction and extinction are taken in to account in all Stellarium images in this thesis).

One echoed at Cairnpapple: 3000 BC (Fig 100).

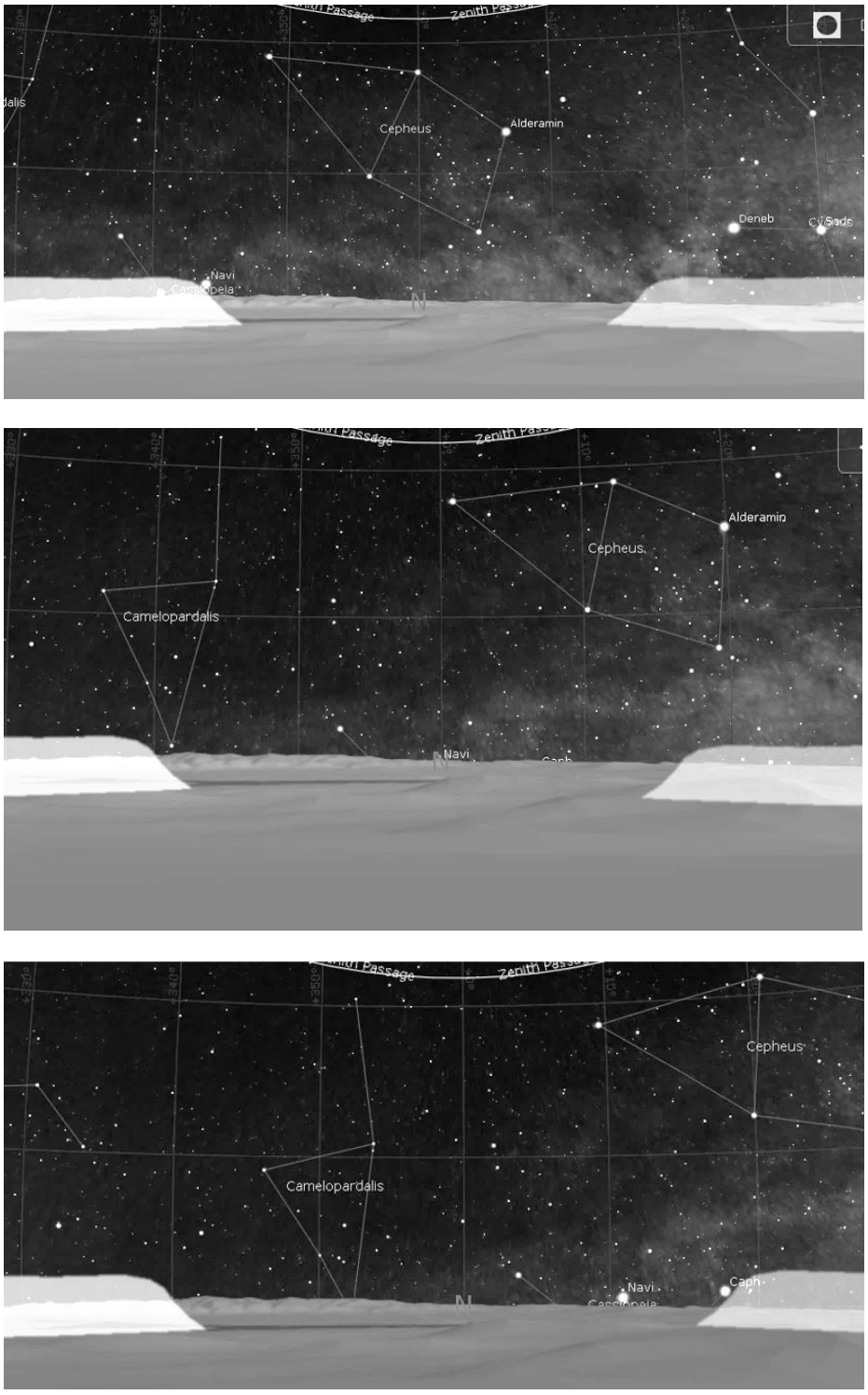


Figure 99. Similarly to the Bullring, the northern entrance of Cairnpapple offered a view of Navi in Cassiopeia skimming the northern horizon c. 3000 BC

Stanton Drew has an alignment again with a clearly defined hill, which Segin clips as the rest of the constellation sets (Fig 101):

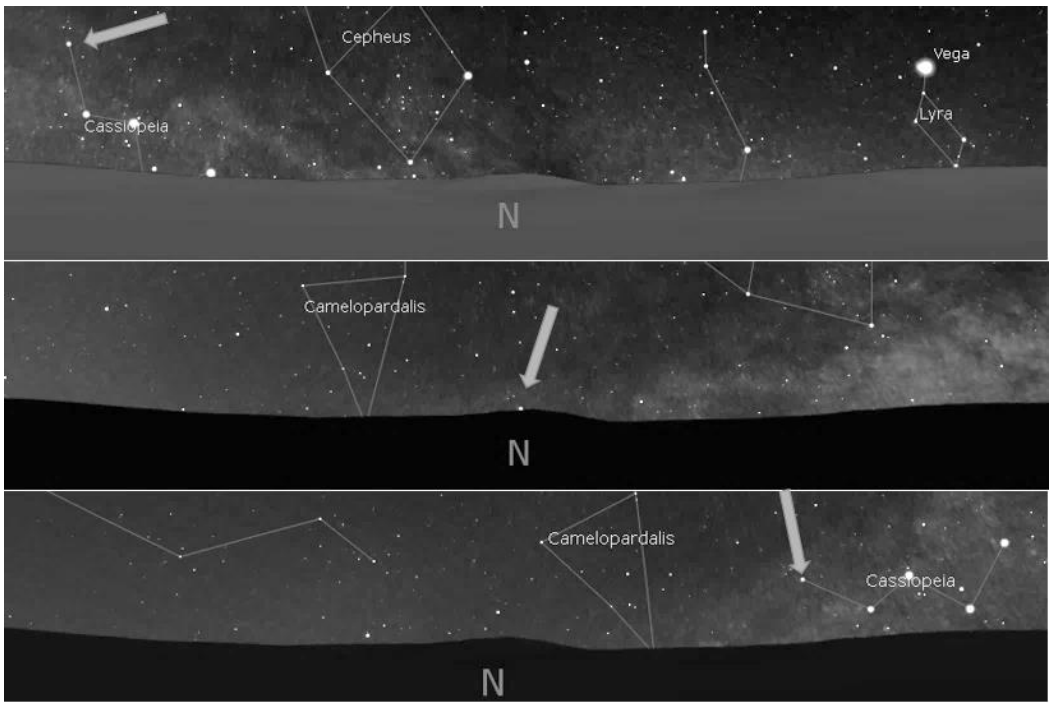


Figure 100. As seen from Stanton Drew Segin in Cassiopeia would have skimmed the prominent peak to the north c.2000 BC

Here a single star is aligned on a single peak, but at Dorchester the width of the entrance seems to have been defined by the setting points of the stars - the entrance of 338-353° matching the setting points of Caph and Segin c 2500 BC (Fig 102):

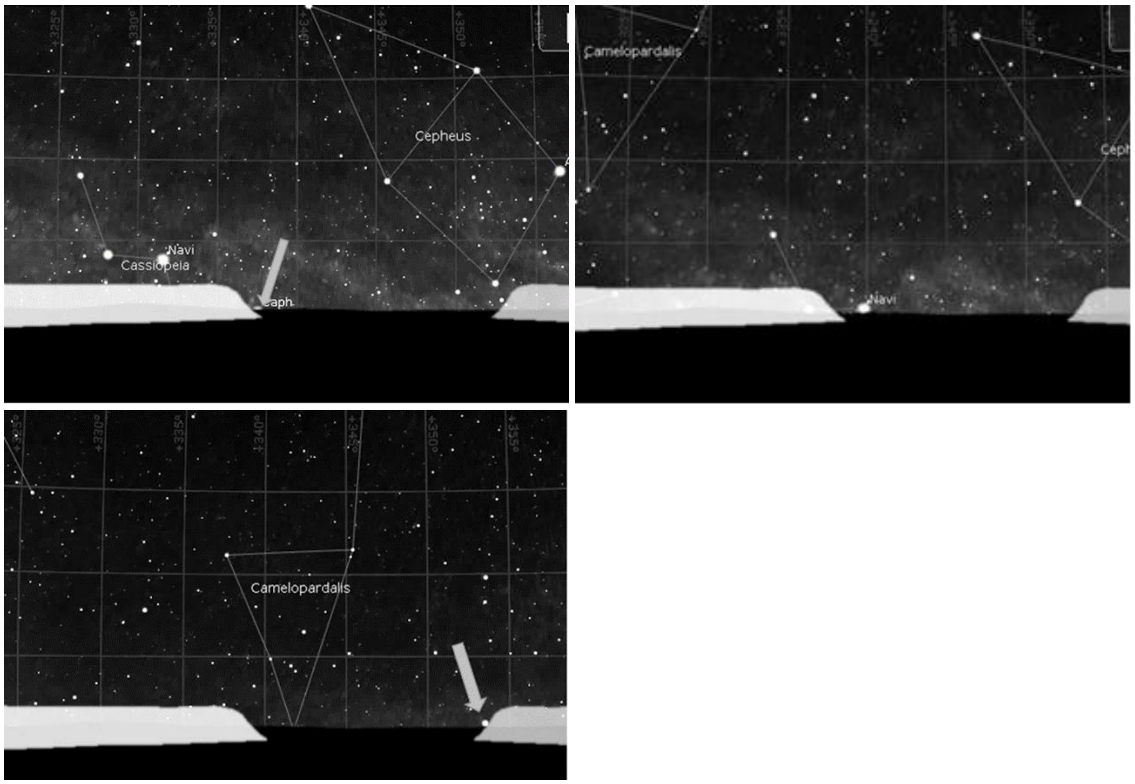


Figure 101. The width of the northern entrance at Dorchester-on-Thames henge seems dictated by the setting points of the stars in Cassiopeia c. 2500 BC

A double-hill alignment is referenced at the Stripple Stones (Fig 103):

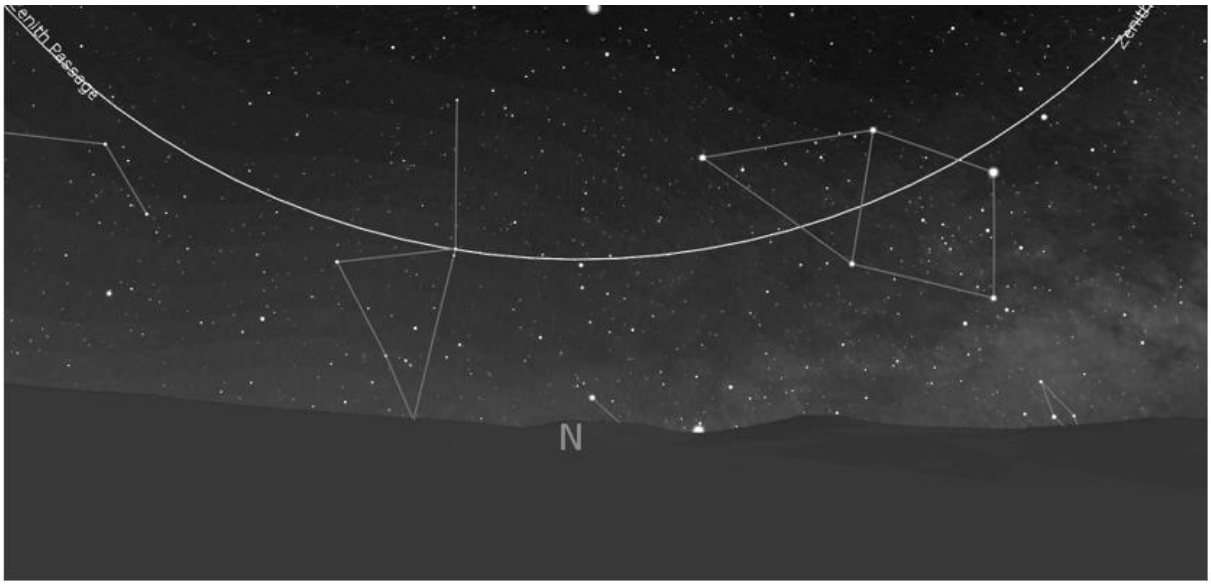


Figure 102. The rising of Navi between twin hills as seen from the Stripple Stones from 2100 BC, Segin clips exact north c 2300 BC

Though perhaps the most interesting site in terms of northern hill alignments is Marden, whose alignment on Cassiopeia to the north utilised the same twin-hills, Milk and Tan Hill, that the Sanctuary had utilised to align on the setting of Gacrux and the midwinter sun, looking south. From Marden the star Segin touched the horizon on Tan Hill only to roll along to Milk Hill and from there rise from the earth again. The likelihood is that the Marden henge was sited to conform to such a viewshed c. 2500 BC (Fig 104).

This analysis has presented only a small percentage of the alignments to this constellation, which occur at 56% of all sites (33% rising, and 35% setting, while 11% show both); yet it suggests, via multiple modes of expression, that these stars were important. When placed in tandem with Crux alignments 75% of sites show alignments on one or the other, 40% on both.

This statistic becomes even clearer if we look at henge 'types'. The division of henges in to classes defined by the number of entrances (broadly, class I have one, class II have two opposing entrances, class III having two pairs of opposing entrances (after Wainwright 1970, pp. 112-133)) provides us with a further refinement of our schema. Class I henges such as Stonehenge and Llandegai A are more properly classed as hengiform monuments, having an external ditch. While Stonehenge shows Crux alignments, as does Wyke Down 2, other Class I henges such as Gorsey Bigbury, Maumbury Rings, Ringlemere and the Stones of Stenness align on Cassiopeia, with Arminghall and the Stripple Stones alone referencing neither Crux nor Cassiopeia, but the setting of Orion's belt.

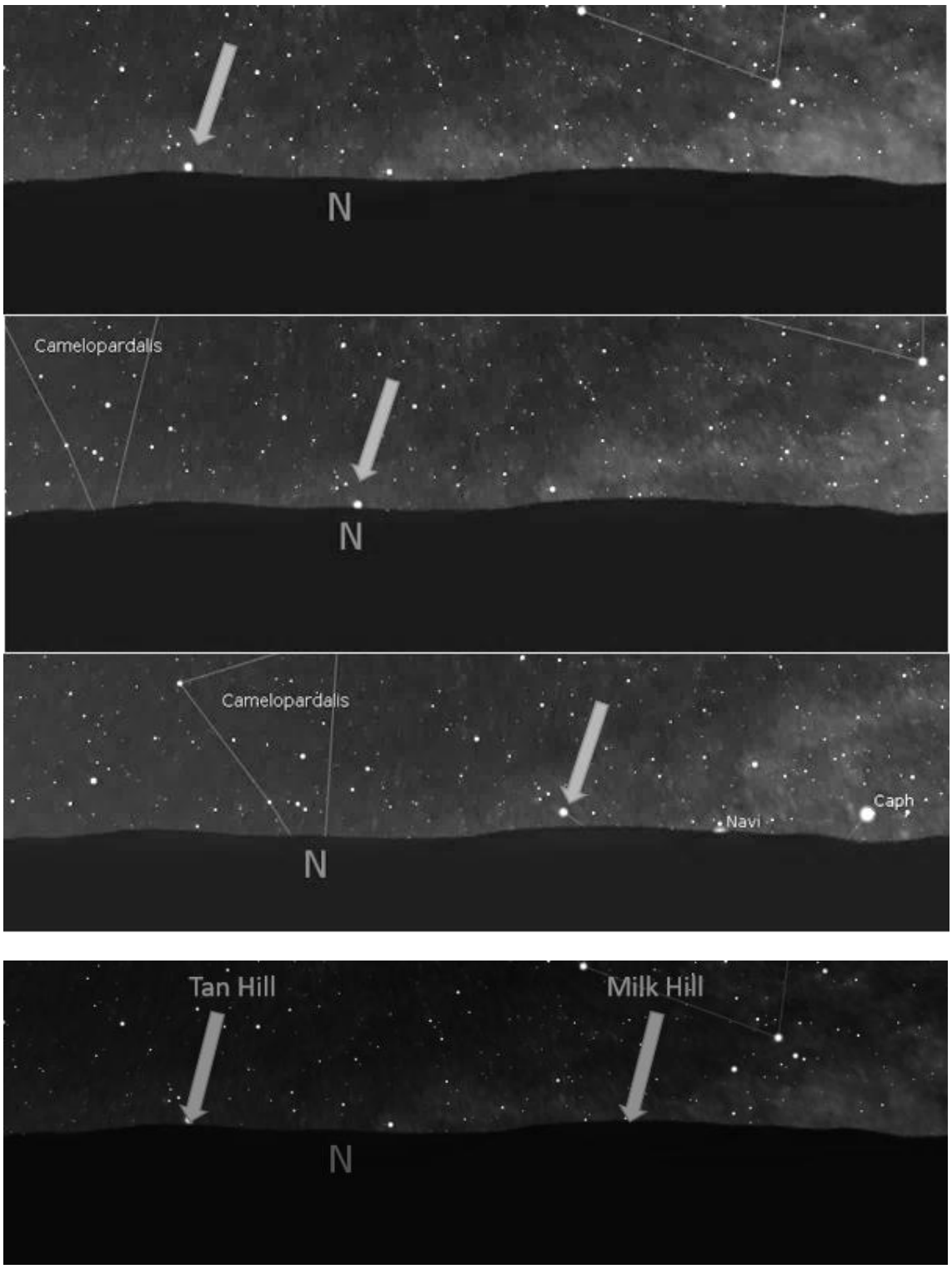


Figure 103. Segin in Cassiopeia clips the prominent peaks of Tan and Milk Hills as seen from Marden c.2500 BC

The Class II henges of Arbor Low, the Bullring, Cairnpapple, Cana Barn, Coupland, Dorchester on Thames, Fargo, Hutton Moor, Little Argham, Millfield North, Nunwick, the Priddy group, the Ring of Brodgar and the Thornborough group all conform to the pattern, with both Crux and Cassiopeia alignments. What's more these henges are uniformly circular in shape. Henges with opposing entrances that don't correspond to the pattern, being oriented roughly E-W, tend to be

squatter or more oval, such as Yeavering, the Devil's Quoits, Figsbury Ring (which may not necessarily be a henge, having been the location of an Iron Age fort – a similar level of doubt concerns the entrances of Llandegai A and B), and the almost pear-shaped Dowth (Fig 105).

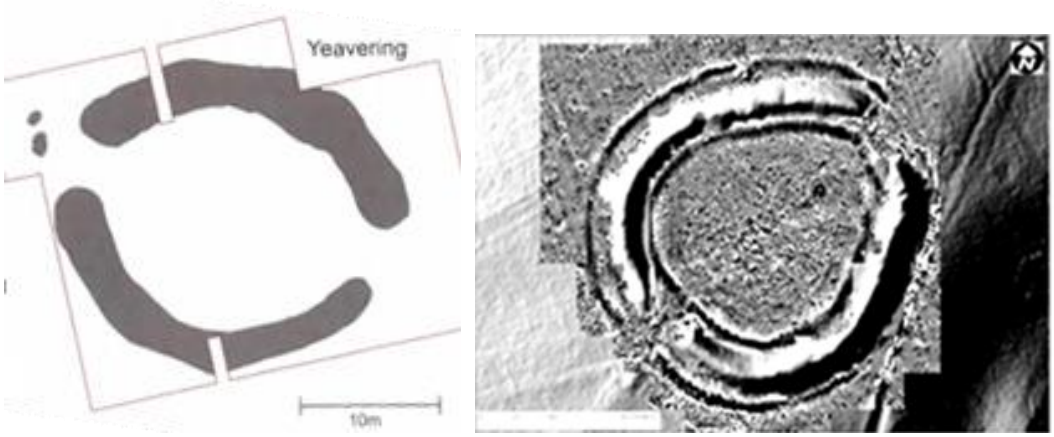


Figure 104. Yeavering henge (Harding 2003) and Dowth henges (LiDAR image)

This leaves Mayburgh and King Arthur's Round Table, located just 400m apart, which along with North Mains, as Class II henges that are E-W oriented but circular. What this suggests is that we might further divide Class II henges in to the roughly N-W aligned Crux and Cassiopeia sites, circular in form (including all Class II a henges), and the far less common roughly E-W aligned 'Orion' sites, some of which (Figsbury and Llandegai) may have been altered in the Iron Age. These two Class II henges, then, may have been different monuments or for different ritual events, as we will now discuss.

4.4 The Milky Way Alignments 3: Orion

4.41 Orion Alignments – timing the solstice?

Having noted that 75% of sites align to the Milky Way, more specifically to the rising/setting of Crux and Cassiopeia, it is now necessary to deal with the alignments that do not fit this pattern. 44% of sites show alignments on a different region of the sky – mainly to the south-east and the south-west, with a noticeable grouping to the east-north-east around 75° that will be discussed in due course; there is some cross-over between these alignments and the Milky Way alignments discussed above, with 22% of all sites sharing both Milky Way alignments and SE/SW alignments, and 9% sharing Milky Way and the ENE alignment – though this means a large proportion of the Milky Way sites (53%) show no shared alignment with the SE and SW, and 65% show no shared alignments with the ENE sky - suggesting that although a cross-over occurs, it is more likely that a Milky Way aligned site will not show these other alignments. 11% of sites show alignments on the ENE without Milky Way alignments, whereas 12% of

SE/SW sites do the same. In Section 3.5 (results) it was suggested that the SE/SW entrances were most likely targeting stars in the constellation of Orion, and the ENE entrances were targeting the point above Orion's shoulder where the sun rose around May Day, at the point where the ecliptic crossed the Milky Way, to which we have given the name Orion Point (OP).

There is the possibility that other stars were being referenced in these entrances – for instance, at Llandegai A the entrance oriented towards 259°–261° seems to be pointing at the setting of Antares in Scorpio, and indeed a small number of sites that point towards Orion in the east could also be referencing this star – but in the case of Llandegai A it seems more likely that this orientation is to be reversed and like the NE entrance at Stonehenge (a site that shares with Llandegai an uncharacteristic external ditch) is an alignment formed by approaching the henge through this entrance – this shows a possible alignment towards the rising of the May Day Orion Point. However, it may be, as stated above, that Llandegai was modified in the Iron Age, in which case the entrances might have been positioned without any reference to the stellar alignments proposed in this thesis. This would not necessarily negate a May Day sunrise alignment here, for such would have been unaffected by precession, but this would not correspond to the rising of the sun in the OP at this date. If the entrances at Llandegai were Iron Age in date it might explain why they are among the minority in this study that do not align on nearby waters, as such symbolic positioning may not have been important in this later era (see 5.1).

Given the role of Antares (Scorpio) in the Orion mythos it may be that sites that referenced this star might be doing so deliberately – but the fact the entrances also point to Orion stars clouds the issue. Not every entrance that points to Orion targets Antares, and so it must be stated that although Antares may be being referenced in some circumstances, especially given its interplay with Orion in myth, it cannot be proven beyond doubt. Its rising and setting at a point close to the rising and setting of stars in Orion, but at the opposite ends of the year, may have been deemed important.

The results of this study show that the alignment to the rising and/or setting of Orion was of almost equal status in the sites – 9 sites seem oriented on the rising of Orion stars, and 12 on their setting, with both rising and setting referenced at 2 sites, Yeavering and Mount Pleasant site IV. The most famed rising sites are those of Thornborough, which has been dealt with above – but it occurs more convincingly at Durrington Walls where the entrance seems dictated by the rising point of Rigel and, later, Sirius (Fig 106).

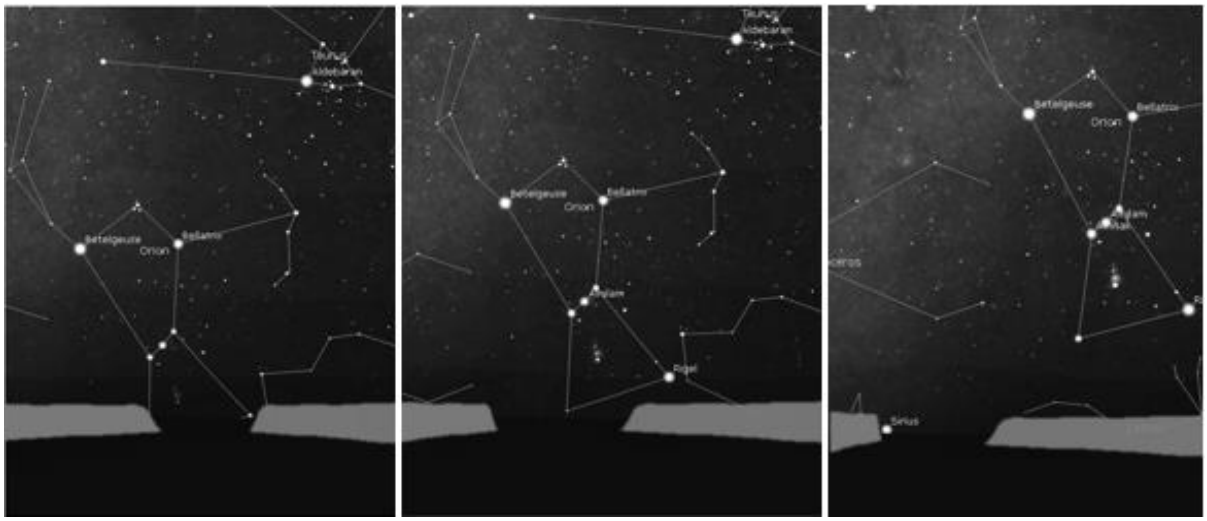


Figure 105. The rising of Orion as seen from Durrington Walls, followed by Sirius, the rising point of which, with Rigel, seem to correspond to the width of the entrance as defined through excavation c.2450 BC

Orion is a massive and obvious constellation; whose anthropoid form is easily recognisable. The view of these stars rising at a given point would have been dramatic in the clearer skies of prehistory.

At Knowlton we see the shared rising of the shoulders of Orion with Antares mentioned above, which may have made such an alignment doubly significant – if both constellations were being referenced (Fig 107).

Castle Dykes has an entrance that seems aligned on the rising of Betelgeuse and Bellatrix over a prominent northern hill, and later frames the rising of the belt stars (Fig 108).

The analysis of myth suggests Orion played a major role in the astronomical myths of the Neolithic – most significantly as the bearer/rescuer of the sun in the spring, but we have seen how its transit fitted in perfectly with the timing of the movements of the Milky Way in winter: its rising coincided with the position of the Milky Way running NW-SE, and thus aligning on entrances built possibly to frame the later rising of Crux and setting of Cassiopeia – while its setting coincided with the alignment of the Milky Way SW-NE and the moment of the setting of Crux and the rising of Cassiopeia.

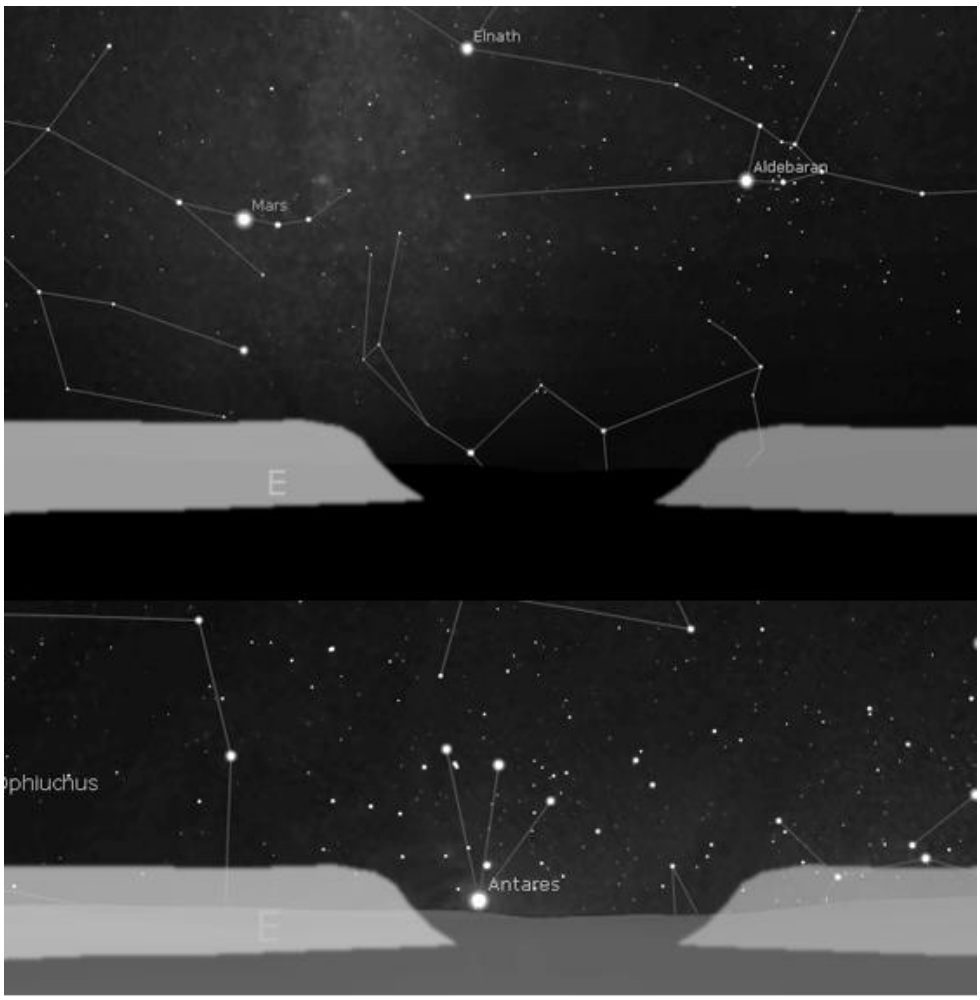


Figure 106. The rising of Orion (above) and Scorpio (below) as seen through the eastern entrance at Knowlton c.2600 BC

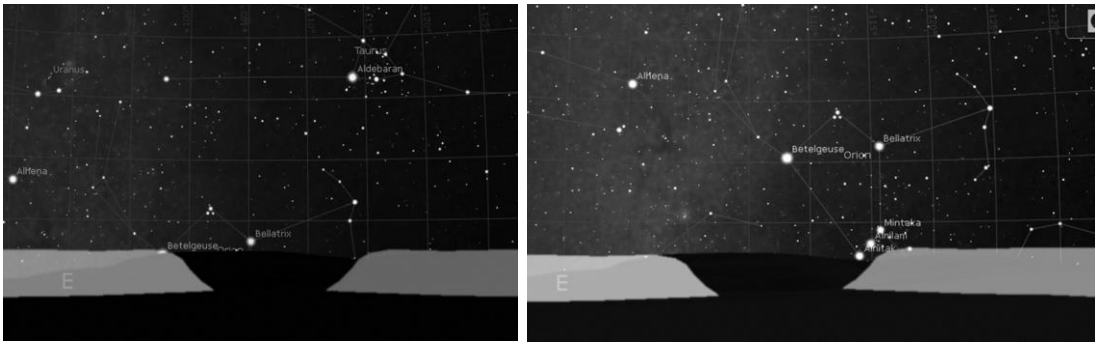


Figure 107. Castle Dykes entrance aligned on the rising of Orion c.2000 BC

The setting can be of the belt stars, such as at Figsbury (Fig 109) and Arminghall (Fig 110):

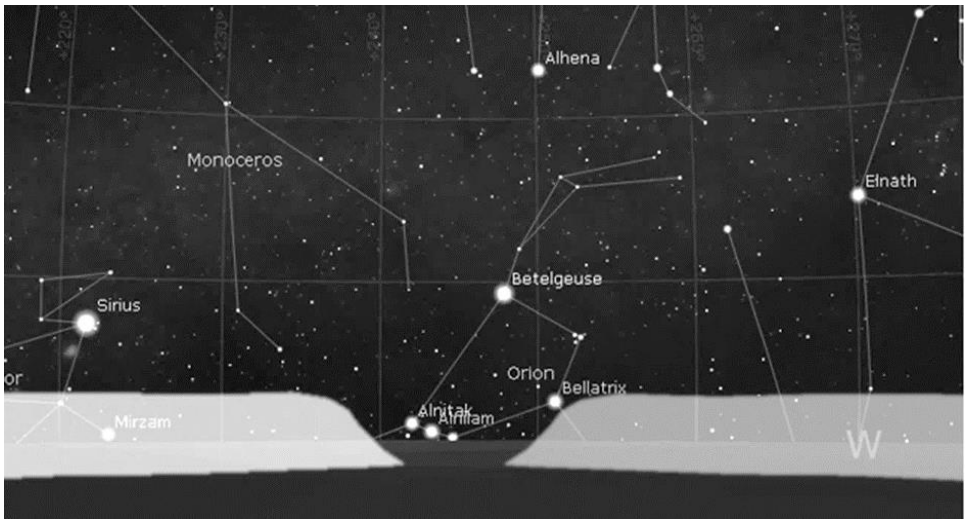


Figure 108. The setting of Orion's belt as viewed from Figsbury

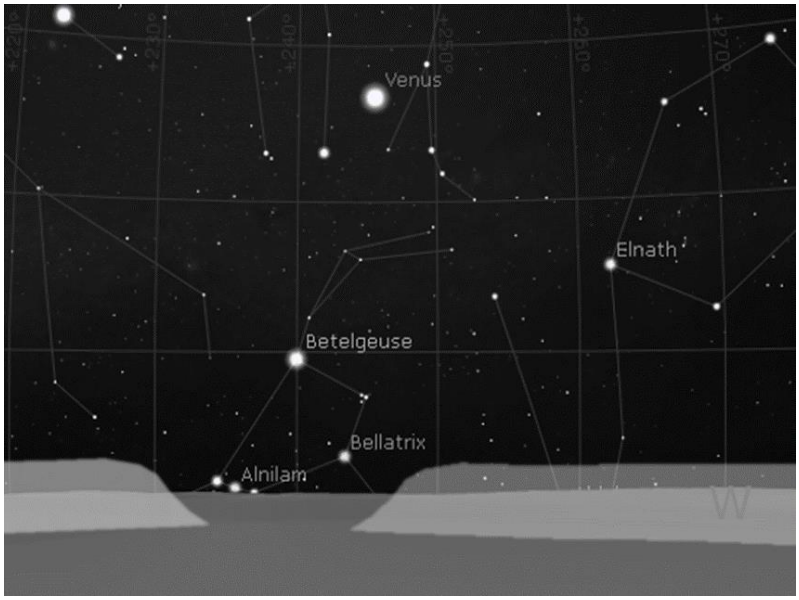


Figure 109. The setting of Orion's belt as viewed from Arminghall c.3400 BC

Or of one of the shoulder stars - This is shown at such sites as Avebury, which also fits Antares (Fig 111):

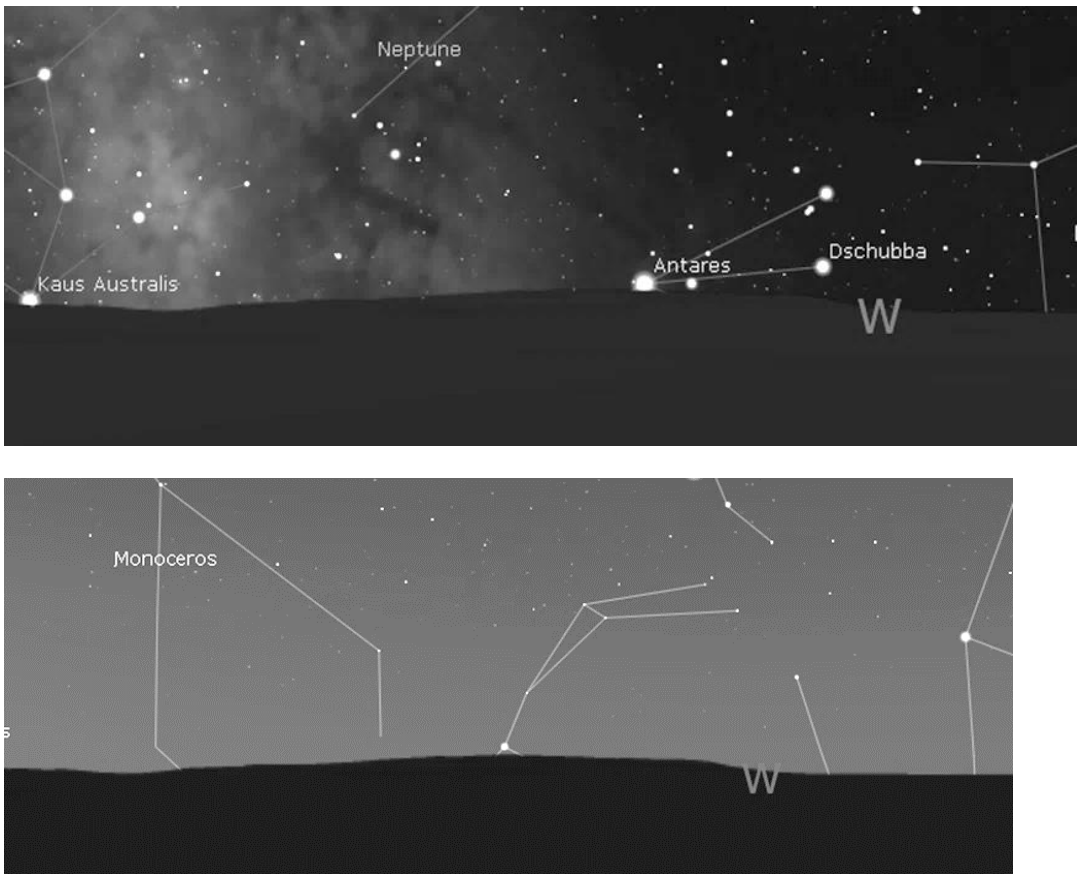
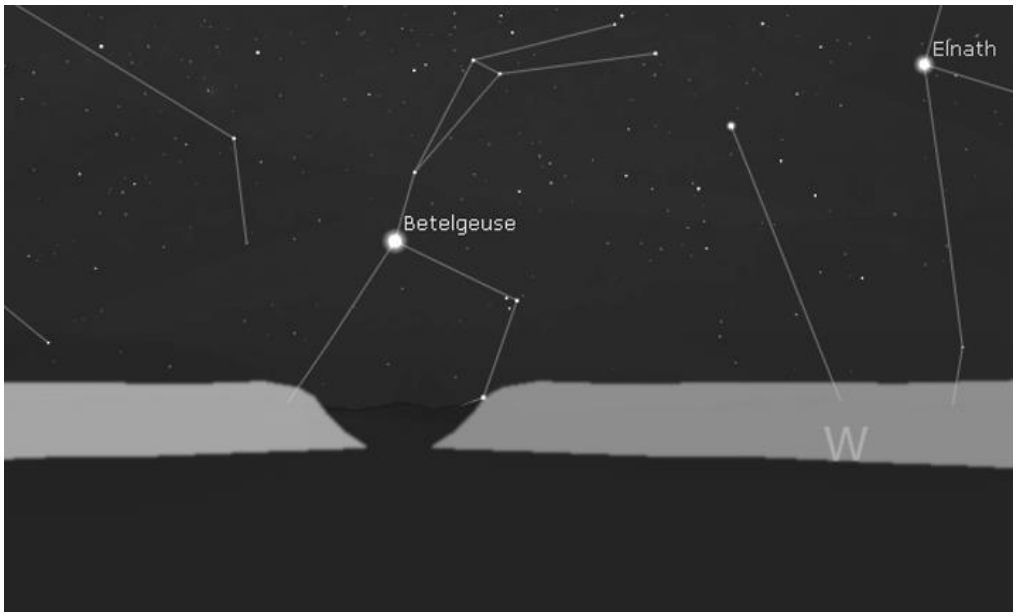


Figure 110. Orion and Antares setting over the hills west of Avebury at 258° and 260° respectively c.2800 BC

And Mayburgh: where the setting is aligned to the distant twin hills of Helvellyn (Fig 112):



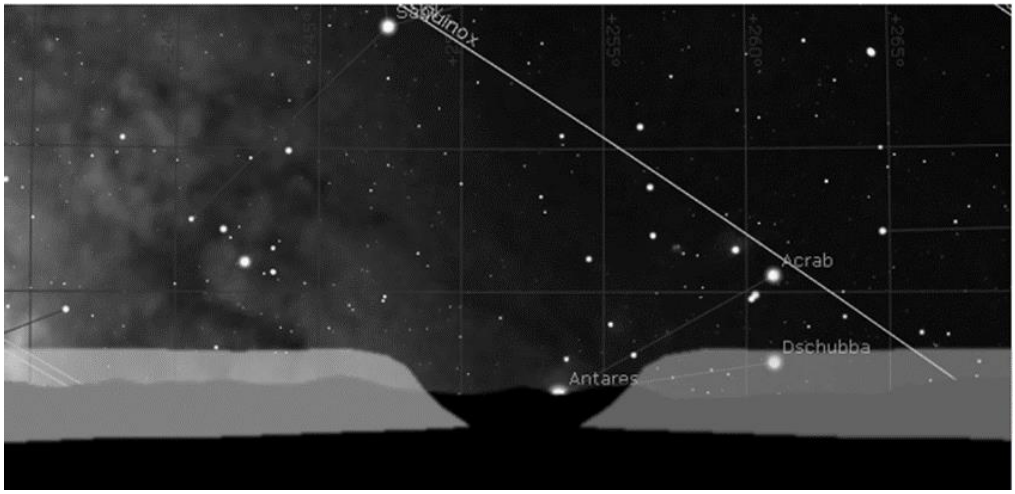


Figure 111. Bellatrix in Orion and Antares and Scorpio setting over the twin hills of Helvellyn as seen from Mayburgh henge c.2200 BC

4.42 Yeavering – a night of drama

The visual spectacle of the movements of Orion is best demonstrated at the henges nearest to the hill of Yeavering Bell. The coincidence of the movements of Orion to the contours of Yeavering Bell are so precise that the likelihood is that the location of the henge was dictated by this sight. There is another facet of this placement in that the midwinter sun is hidden by the hill, suggesting a visual representation of the captivity of the sun in the underworld 'mountain'.

The trope is partially referenced from Coupland henge to the north of Yeavering (Fig 113) where Orion seems to stand on the hill shortly after rising – though the motions of Sirius, as we will see in the next section, are more dramatic here.

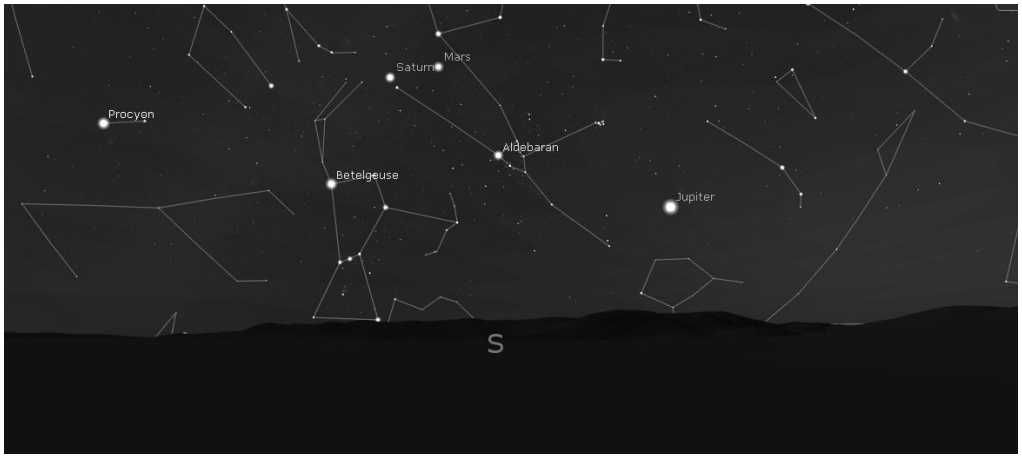


Figure 112. Orion and Sirius appearing over Yeavering Bell as seen from Coupland henge c.3800 BC

At Yeavering the rising and setting of Orion is much more dramatic. The first appearance of Orion is between the henge banks, where the shoulders rise heliacally around the summer solstice (Fig 114).

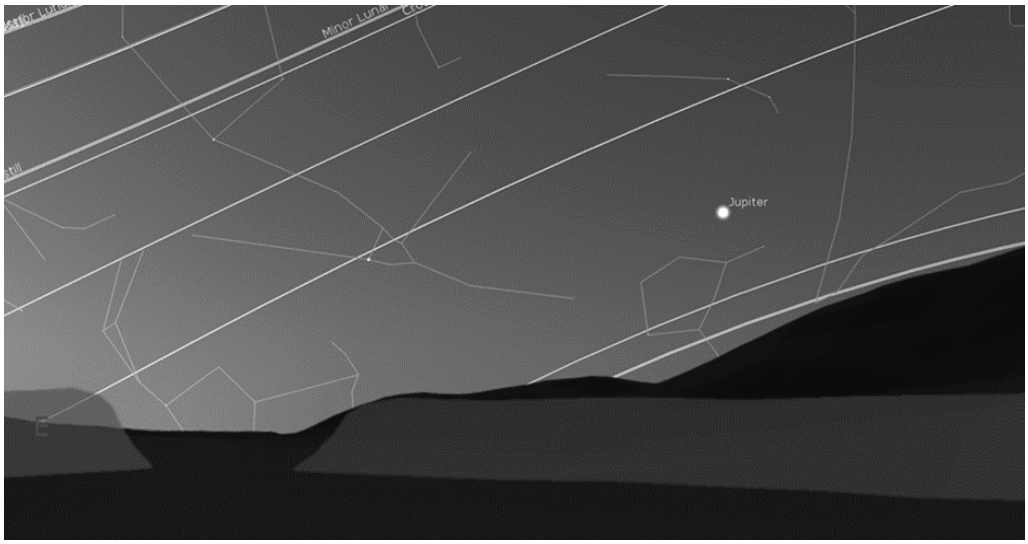


Figure 113. The heliacal rising of Orion around Midsummer as viewed from Yeavering c.2200 BC

But the most impressive site would be reserved for the dark skies of winter (Figs 115–118), with Orion appearing to stride over Yeavering Bell followed by Sirius at his heels.

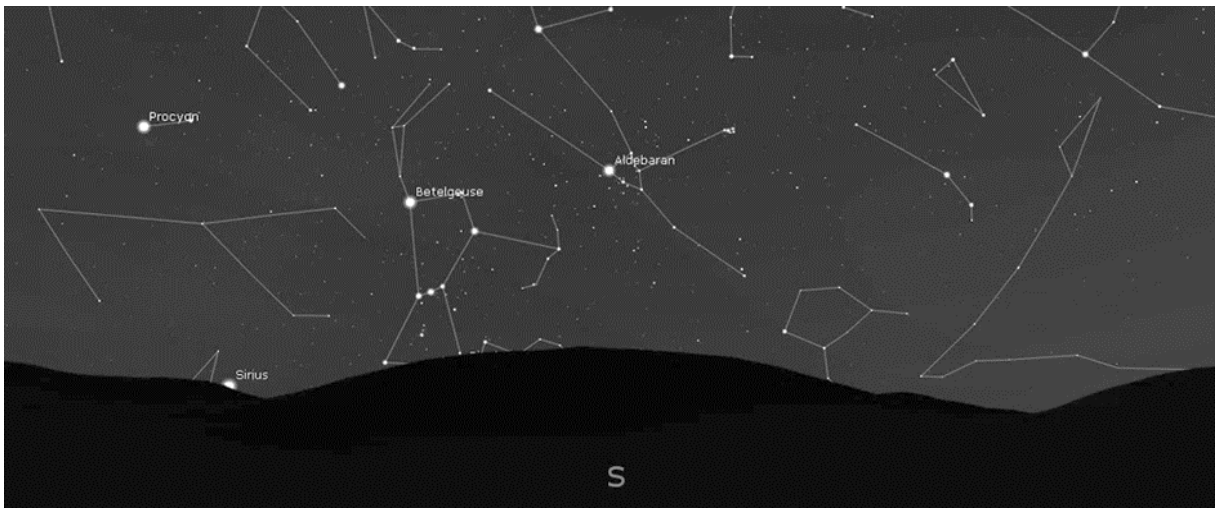


Figure 114. As Sirius rises Orion is already 'climbing' Yeavering Bell, as viewed from the henge c.2200 BC

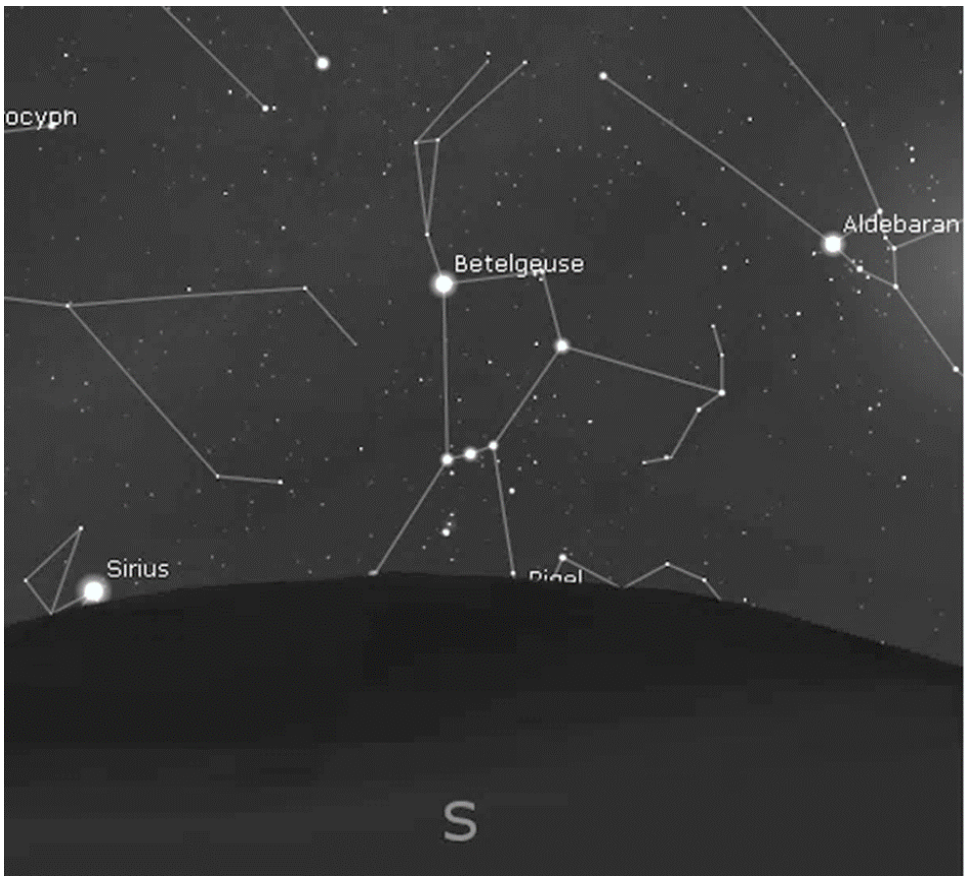


Figure 115. Culmination of Orion over Yeavering Bell c.2200 BC

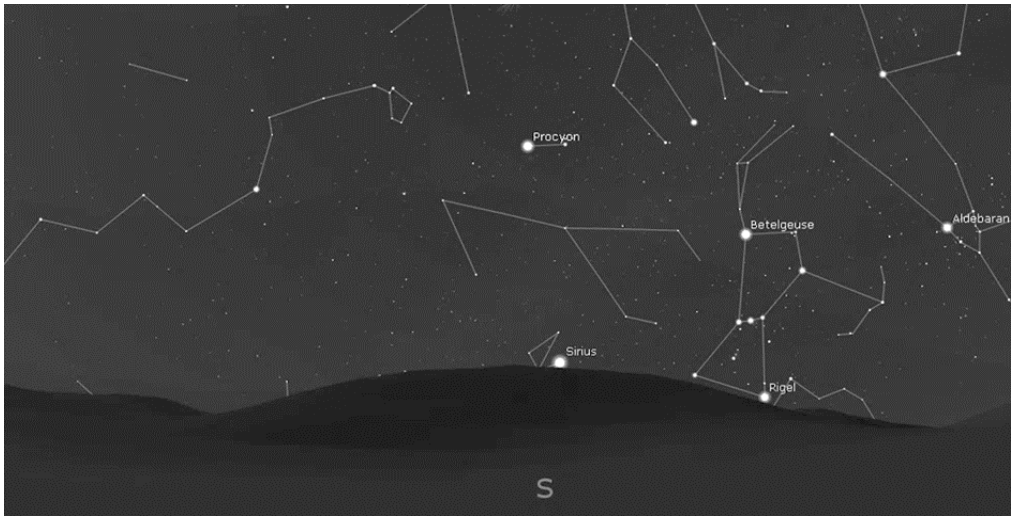


Figure 116. Culmination of Sirius over Yeavering Bell c.2200 BC

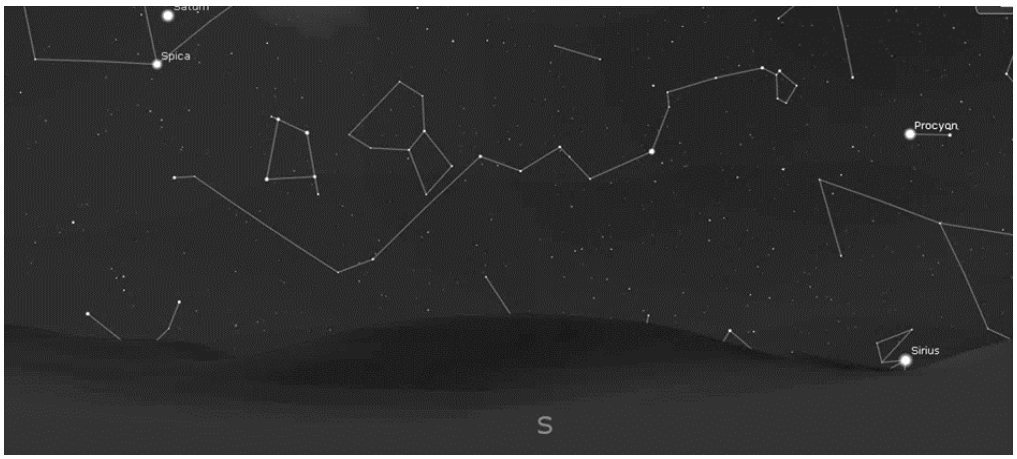


Figure 117. Setting of Sirius as seen from Yeavering henge c.2200 BC

The henge entrances would also 'match' the position of the rising and setting points of the Milky Way just after rising of Belt stars as Cassiopeia reaches its highest point (Fig 119).

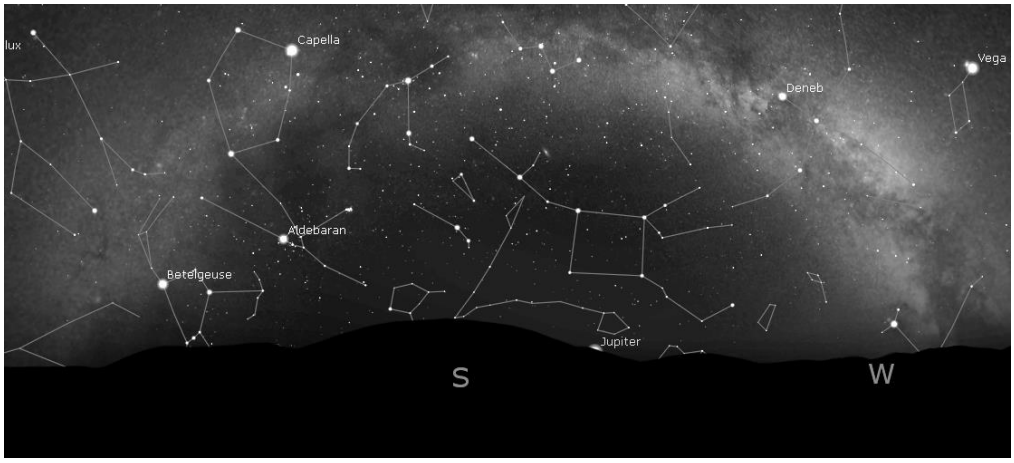


Figure 118. The Milky Way aligns with the entrances of Yeavering henge as the belt stars of Orion appear over the horizon c.2200 BC

The mythology discussed in Part One suggested the role of Orion was mainly linked to the rising of the sun, originally perhaps at midwinter but in later times becoming associated with the spring. It is possible, then, that the majority of 'Milky Way' sites studied in this thesis that do not reference Orion show a concern solely with the winter sky, with no interest in referencing the spring sun with which Orion, due to precessional changes, had come to be associated. This does not mean this motif was not deemed important – only that some specific sites did not reference this spring facet as they were arguably built for midwinter ceremonies alone. The same goes for sites that seem to align on Orion or the OP without referencing the N-S alignment of the Milky Way; perhaps these were to be used in the spring and in these cases it was deemed that different structures ought to be built for this purpose – hence Durrington shows an Orion alignment while Stonehenge does not (this distinction between Durrington and Stonehenge has been made by Parker Pearson, who noted that the pig-dominant site of Durrington seemed to

contrast with the unoccupied, cattle-dominant Stonehenge (2012, pp.119–121); perhaps we are looking at two different rites that were performed in different locations – though sites were built, like Avebury, that referenced both without there being an issue with such overlap. But these seem to be an exception, and it may be that certain 'winter' Milky Way sites were involved in rites concerning the dead, for instance, or healing/visions that required interaction with the galaxy, whereas OP sites were the domain of rites of the living – equally one site type may have been for females and the other males, or some other societal or religious division. This separation between sites does suggest differing rites, in the same way that although a church might be used for both a funeral and a wedding, a registry office is not used for funerals, nor a crematorium for weddings. A henge might provide a location for Orion rites and Milky Way rites, yet it may have been an Orion site might not be deemed suitable for Milky Way/winter rites and vice versa; we may, then, be looking at two ritual centres that might be dual-purpose in some rare instances (i.e. in the 'super-henges') but separate in others. This is an area for future study.

4.43 Orion Point sites as stand-alone structures

We need, at this juncture, to answer the question of why there is not more uniformity among sites. As we have seen, 75% of all sites show an alignment involving the rising/setting of Crux and Cassiopeia; this is the dominant alignment. However, a considerable proportion (44%) show an alignment either in Orion or at the Orion Point. These alignments are connected by the fact that each occur within the Milky Way – Crux and Cassiopeia being set constellations within the galaxy and the OP being an unmarked crossing-point of the ecliptic and the Milky Way but highlighted when the sun is passing through this point, which was around May Day in the time of the henges. What is of interest is that although there is a cross-over between Crux/Cassiopeia orientated sites and Orion oriented sites (22% of all sites share orientations on Orion and Cassiopeia/Crux) only 9% show a cross-over between OP and Cassiopeia/Crux; 55% of the OP sites are not oriented on Cassiopeia/Crux at all, and so stand in a class of their own. There seems to be a geographical factor in this. OP sites are more abundant in Wessex. Aside from anomalies at Llandegai A (possibly Iron Age), Mayburgh, North Mains and Balfarg, the rest are clustered around Wessex with one outlier in Oxfordshire (Devil's Quoits) - evidenced at Avebury, the Sanctuary, Coneybury, Figsbury, Marden and Stanton Drew.

13 henges alone don't have Cassiopeia/Crux alignments - of these 6 are Orion Point sites, and 4 align on other stars in Orion; the 3 'anomalies' being the Sirius and solar oriented Dowth henge, King Arthur's Round Table (solar) and Llandegai A, which alone orients on the setting of Antares, but this may equally be an internally-oriented OP site (Fig 120).

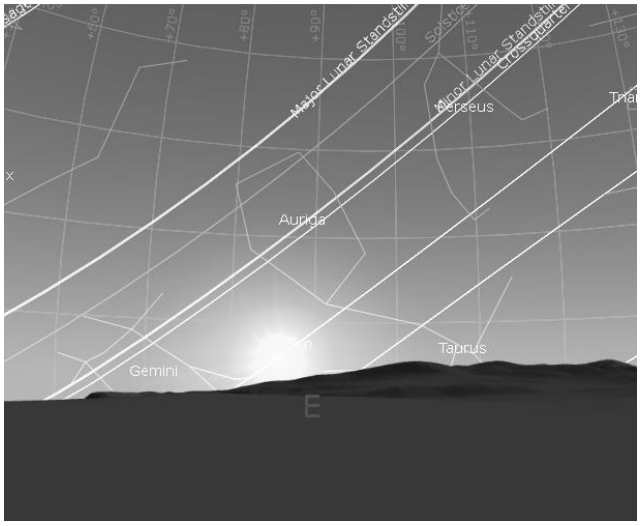


Figure 119. The sun rising in the Orion Point at May Day as seen from Llandegai A c.3100 BC

It may have been that differing site types reflected differet usage dates – that the OP sites were connected to the spring, whereas the Crux/Cassiopeia sites were winter sites. But there may also have been a difference in function - the Crux/Cassiopeia sites may, for instance, have been concerned with the dead (see discussion). This OP tradition is not evidenced in Orkney, so arguably it may have been a southern tradition that later spread to other areas, though in a very piecemeal way; yet 45% of all OP alignments are in sites with Cassiopeia/Crux alignments which perhaps shows an attempt to integrate differing ritual observances in a single site. Aside from the two of cases (Figsbury and Llandegai) where a Neolithic floruit is not certain, Coneybury, North Mains, Mayburgh and the Devil's Quoits stand apart as 'OP only' sites, arguably associated with May, a facet not lost, arguably, on whoever named Mayburgh, no doubt based on such an observation.

One point for future research is the apparent correlation between the OP and at least two cursus monuments – the Stonehenge Greater Cursus which points to the OP rising c. 3500 BC and the Llandegai cursus that points to its setting. This is beyond the remit of this study, but there is the possibility that the orientation on the OP was a feature of other ceremonial structures prior to the henge building tradition and that the Orion may-day henges may represent a carry on of this older tradition. Both Llandegai and Coneybury may be examples where a circular monument took over the function of a nearby linear one (Figs 121 & 122).

Another avenue for future study is the possibility that the OP might not have been solar, but perhaps marked an alignment to the rising Milky Way point when the Milky Way is at its highest, crossing the zenith or to its setting point when Cassiopeia is at its lowest culmination, as suggested by Silva (*personal communication*, 2018). This would have the advantage of

bracketing the OP sites in the same group as the Crux/Cassiopeia sites, as all then would be aligned on the galaxy.

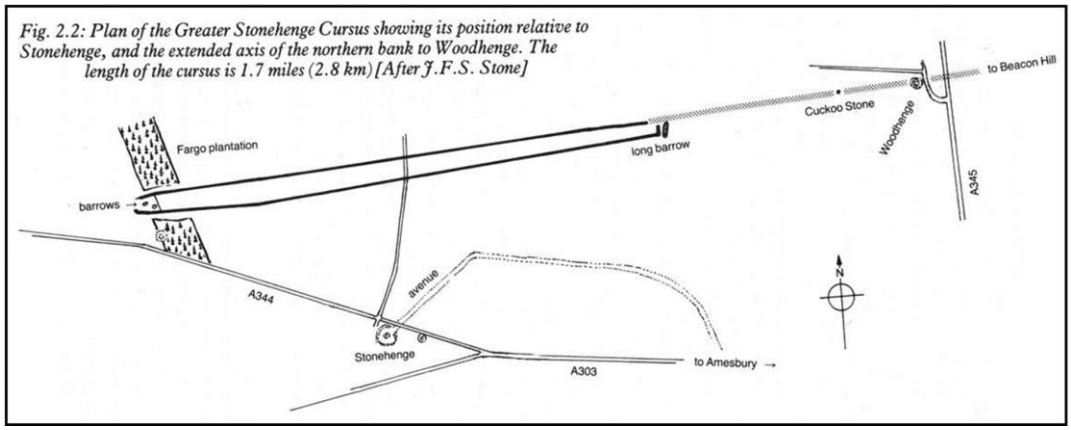


Figure 120. The alignment of the Greater Stonehenge cursus is oriented on the Orion Point (after Devereux 2003, p.71)

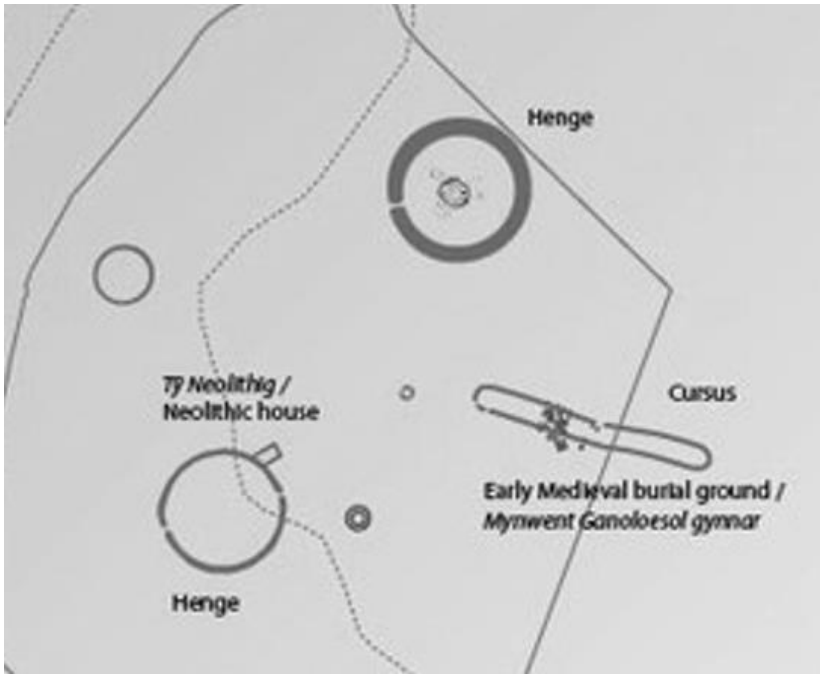


Figure 121. The Llandegai cursus is aligned to the setting of the sun in the Orion Point (http://www.heneb.co.uk/llandegaiweblog/overallplan2.html)

Of the 11 OP sites, only 2 show any correlation with other solar events, and these are the only two which point to the setting of the OP – Balfarg and the Sanctuary, which reference Midsummer sunrise and midwinter sunset accordingly. These sites are anomalous compared to the other 9 sites that refer to May Day sunrise alone as aside from pointing at the setting of the OP, they also are both oriented on the setting of Crux, and so arguably the presence of solsticial settings may be linked to the appearance of Crux rather than the OP. There can, then, be seen to be another factor with OP sites in that they seem to point to one date alone. We might do well

to pen the term ‘May Day’ henges for such sites, and see them as involving rites that at some sites were incorporated in to the Crux/Cassiopeia sites but which more often than not were set apart suggesting that the rituals that took place there were somehow different from the Crux/Cassiopeia ones; either just through a differing date, or because one was more associated with winter and the solstices, and the others with the rising sun on May Day, associated with Orion. This difference is explained by myth, as noted in Part One.

The less numerous appearances of the OP in henges does not mean the symbolism of May Day wasn’t widespread – only that in most sites its symbolism was not included in the henges – perhaps if the henges were associated with winter or death symbolism the May Day rites were deemed inappropriate or incongruous – hence the (albeit very few) stand-alone sites. Where the OP orientations do appear with Cassiopeia/Crux/solar alignments it was at larger sites - Avebury, Durrington, Marden and Stanton Drew, multi-focus sites that include a wealth of alignments, and where such amalgamation might be expected.

However, this separation between these sites may have simply been due to the effects of precession; in part one it was argued that Orion may originally have been witnessed carrying the sun on its shoulder around the winter solstice c.10,500 BC. At such a time there was no separation between this event and midwinter, yet as time moved on, so the stars shifted so that by 7,500 BC the sun was following the rising of Orion in the spring, and by 4,500 BC the sun was rising on Orion’s shoulders at the spring equinox. By the time the henges were built this rising on the shoulders of Orion occurred after the equinox, falling around May 1st. Perhaps this change of date prompted a change in ritual and a seen separation between the winter/spring rites and those of summer. May 1st, however, is not, especially in the northern part of Europe, too late to still be regarded as ‘spring’ – and it may have been indicative of the start of summer when cattle were moved to their summer pastures. Thus, the symbolism of Orion as bringing the better weather still had symbolic value even though it had moved forward in time from an original equinoctial position. It is tempting to see the later Celtic celebration of May Day as a later manifestation of an earlier Neolithic celebration of this time of year. The opposite time of year was Samhain, late October/early November when Scorpio was rising and setting in the same portion of the sky as Orion 6 months earlier. In Celtic traditions this was the start of winter.

Though a correlation between Celtic festivals and the Neolithic ritual tradition cannot be proven, it has long been used as evidence of non-continuation that the Neolithic sites tended to reference contrasting times of year (such as solstices) than the later Celtic calendar (Hutton 1996). With the evidence gleaned from the sites studied in this thesis, this position is no longer as secure, as several Neolithic sites specifically refer to a celebration or observation around the

start of May, making the suggestion of some sort of continuation more tenable. If the eastern alignment of Long Barrows was a Milky Way alignment, too, this massively increases the number of sites oriented on such a date (see 5.34).

4.54 Sirius

Alignments to Sirius, as we have seen, occur at the northern sites of Coupland and Yeavering, where the star follows Orion over Yeavering Bell like a faithful hunting hound. Yet 18% of sites show connection with this star. The difficulty in analysing such correlations is the sharing of this star with the declination of the winter solstice sun – yet this shouldn't lead us to instantly dismiss such alignments – for the coincidence of the brightest star rising in the same spot as the midwinter sun renders it doubly special, one might imagine. Newgrange's alignment on the rising midwinter sun seems to be referenced in myth, yet equally the star would have aligned with the roof box at the time of its construction. Nearby Dowth henge may have aligned on both heavenly bodies, too. What may have been important is that a) Sirius had replaced the position formerly held by Crux as midwinter rising point and b) Crux could not be seen from Orkney – meaning Sirius may have been targeted in its stead, and we do see possible alignments on Sirius in Orkney.

At the Stones of Stenness, the twin hills of Hoy defined both solar and Sirius settings – perhaps Sirius more so than the sun, with it setting between the twin hills (Figs 123 & 124).

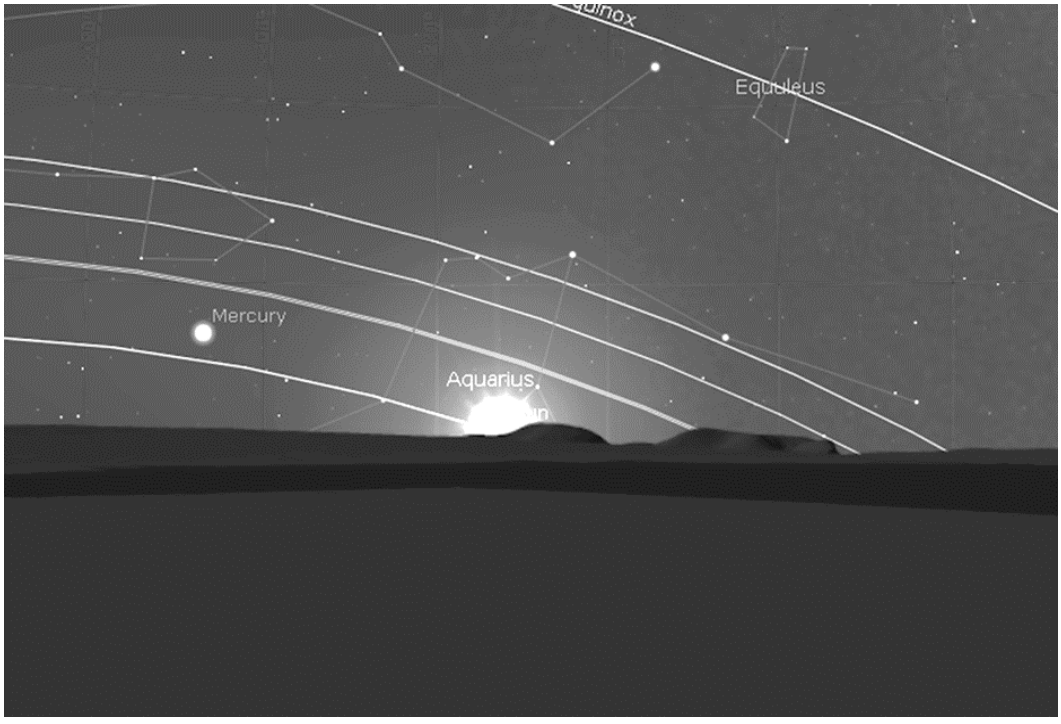


Figure 122. Midwinter sunset as viewed from the Stones of Stenness looking towards the twin hills of Hoy c.3000 BC (atmosphere removed to better show position of sun)

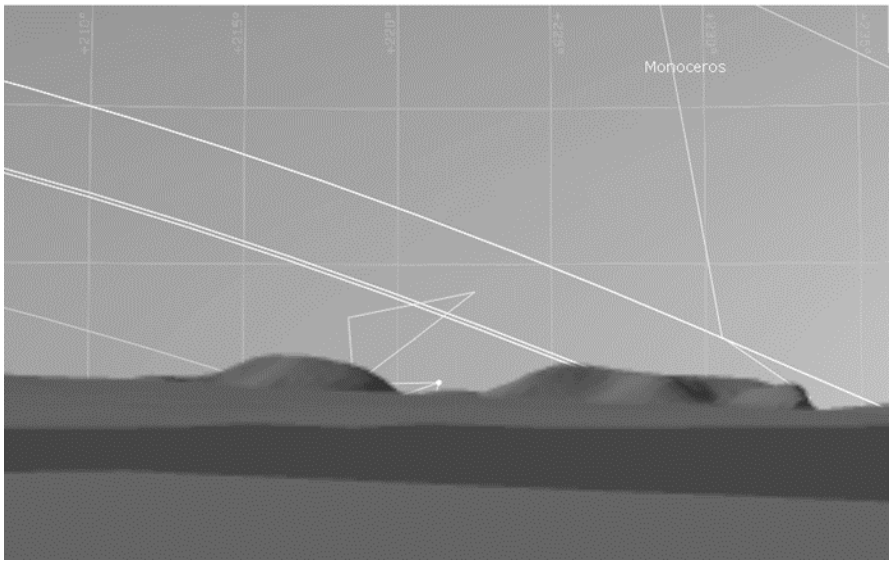


Figure 123. The setting of Sirius between the hills of Hoy as seen from the Stones of Stenness c. 3000 BC

However, precession soon shifted this position, so that c. 2500 BC Sirius no longer set on the lowest, and most visually dramatic point, between the hills, but west of this behind the slope of one of them (Fig 125):

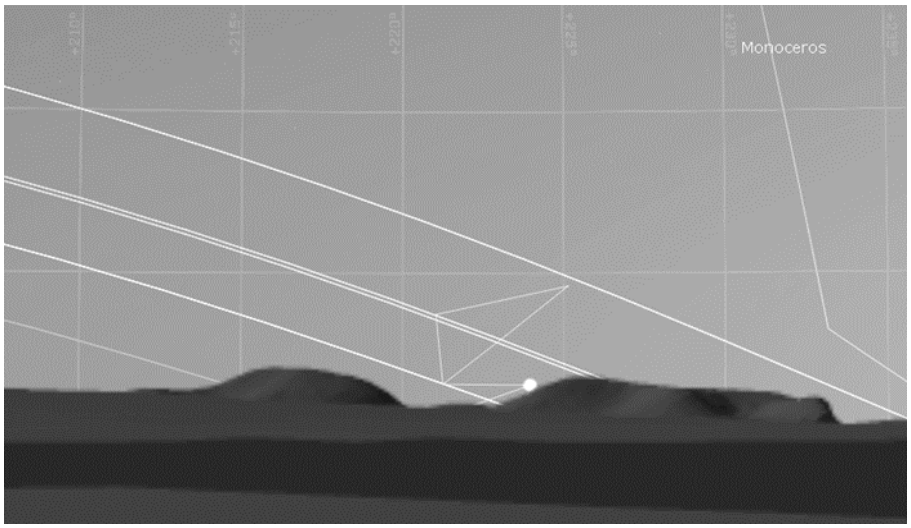


Figure 124. The setting of Sirius as seen from the Stones of Stenness c. 2500 BC

If this moment had been vital in ritual it may explain why the henge was supplemented/replaced by another to the north at the Ring of Brodgar. When this later henge was built, in a more northerly position, Sirius could once again be seen reaching the flat horizon (Fig 126). If the henge was built to replace Stenness it suggests that the movement of Sirius might have been one of the reasons for the change – the sun's position, after all, was constant – being unaffected by precession, and so hadn't moved (Fig 127).

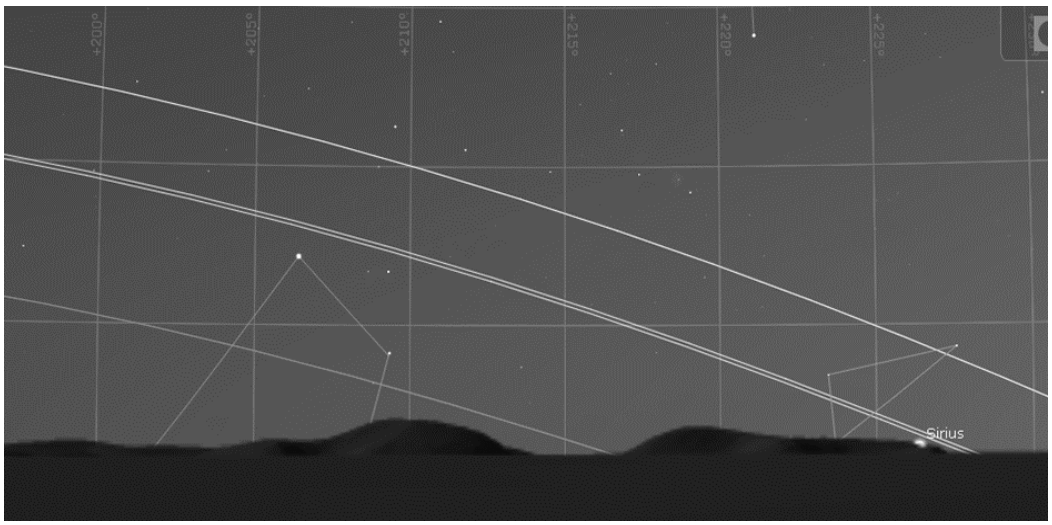


Figure 125. The setting of Sirius defined by the twin hills of hoy as seen from the Ring of Brodgar c. 2500 BC

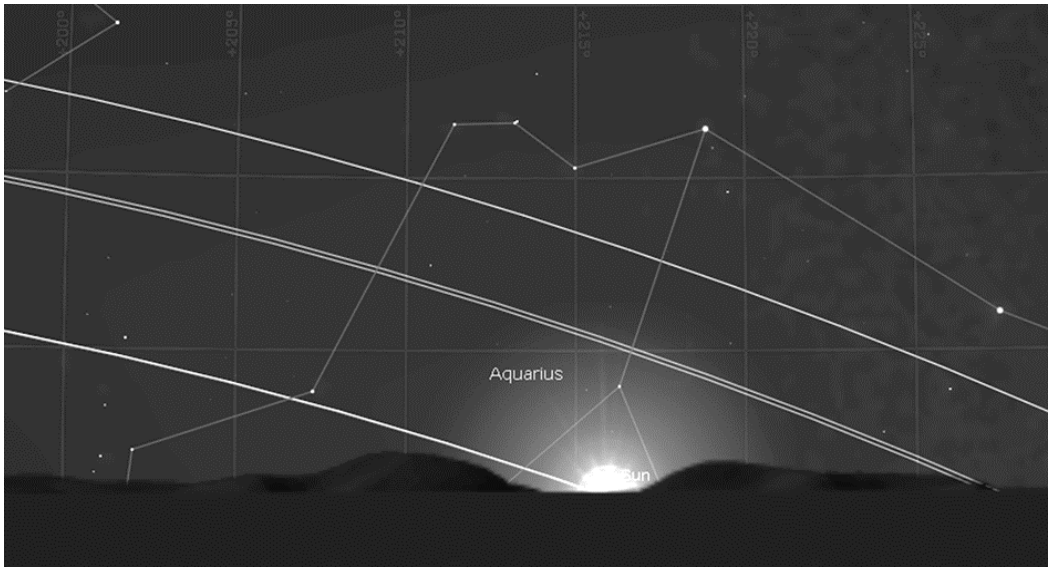


Figure 126. The setting of the midwinter sun defined by the twin hills of Hoy as seen from the Ring of Brodgar c.2500 BC

That Sirius is (possibly) found referenced in small groupings (Orkney, the Boyne Valley, the Yeavering landscape and 3 Dorset sites, Knowlton, Mount Pleasant, Wyke Down and Stanton Drew in Somerset) suggests it wasn't a widespread cult – it may have been that if it replaced Crux on Orkney that in places where Crux could still be seen it was simply not deemed relevant – or if it was it was due to direct contact from Orkney, say to the Boyne Valley. The Stanton Drew alignment might have been an older midwinter alignment. Sirius remains statistically relevant (18% of sites) yet the possible midwinter confusion renders it hard to analyse – and where it is important, i.e. in Orkney, it may be taking on the role of lost Crux. This shows that a star may be bright yet not necessarily be important in henge alignments; our reconstructed P-IE myth gives less emphasis on Sirius than Orion, and this is echoed in the henge orientations. However, Sirius does become important later in Egypt, for example, where it becomes

associated with the flooding of the Nile, and in certain Mediterranean cultures, such as that of Crete (*see* Kerenyi 1976, pp.29–41); yet, at the time of the building of the henges alignments on this star are somewhat anomalous. At Coupland and Yeavering it follows Orion rather pleasingly, yet it was still to come to the fore mythologically speaking; eventually, in Hindu tradition, when precession has pushed Orion well past the spring 'sun-rescuer' position it was Indra's dog, Sarama, who stole the soma/milk (powers of fertility) from the demons, thus acting as the 'rescuer' in the god's stead (Doniger O'Flaherty 1975, p.71); in Egypt, Sirius became Sopdet, the 'rescued' cow herself, associated with Isis, when its rising coincided with the flood (Parker 1950; 1976, p.182) – allowing Orion (Sahu) to still rescue the 'solar' cow-goddess but now in stellar form after a time when the original solar alignment with Orion had been lost, though its imagery remained important in myth and ritual. The Egyptian Orion/Sirius symbolism, then, I would argue, was a palimpsest for an older Orion/sun tradition lost through precession.

Chapter Five: Stellar symbolism – incorporating myths

5.1 Stellar or River alignments?

The stellar hypothesis posited in this thesis, which argues the position of the Milky Way and stars within it as a defining factor in henge orientation, is new. Previous explanations of orientation are manifold; Loveday, for instance, has suggested an alignment between older trackways and henge entrances (in Gibson 1998, pp.14–31), while Richards suggests a correspondence between landscape and the henges, arguing that 'the relationship between henges and rivers provides a metaphorical conjunction between the natural flowing of water and human movement into the monuments.' He suggests archaeologists:

> …may have overlooked the metaphorical significance of water, and consequently the elemental nature of the architecture of henge monuments. Obsessed with the classification and definition of site 'types', the significance of the actual image and outward appearance of henge monuments as a cultural representation of the perceived world has been overlooked. The majority of henges are situated in low-lying areas, natural bowls and valleys adjacent to water, often assuming positions where they are physically encircled by river systems. Generally, the ditches of henge monuments are relatively deeply cut and, due to their low-lying position, many will almost certainly have contained water at certain times of the year when the local water table rose. This is the significance of the internal ditch as both a container of water, itself symbolic of division, transition and purity, and in conjunction with the outer bank, as a microcosm of the local topography, of the experienced world. Importantly, the times of the year when the ditches contained water may indicate the seasonal nature of practices occurring within the monuments. Under these circumstances the architecture of the henge monument embodies spatial and temporal definition. In this essay I have examined the architecture of henge monuments in terms of their materiality in relation to the constitution of the natural world. This has allowed me to think about their form and imagery in terms of the unification of elements within a 'ritual' context. A further consequence of this approach is that the ditch deposits found within these sites takes on a different complexion if they are now considered to be appropriate to be placed in 'water', and a more direct comparison with other 'watery' deposits becomes possible. This approach also allows the internal features of henges to be reconsidered in the context of one of elements in a cosmological context. (1996a, pp.332–333)

A cursory examination of the placing of henges in relation to nearby sources of water suggests this was more complex than a symbolic mirroring of water; Darvill (1997, pp.179–180) has suggested an analogue between the entrances at Stonehenge and the direction of the River Avon, and his suggestion bears much fruit (Fig 128).

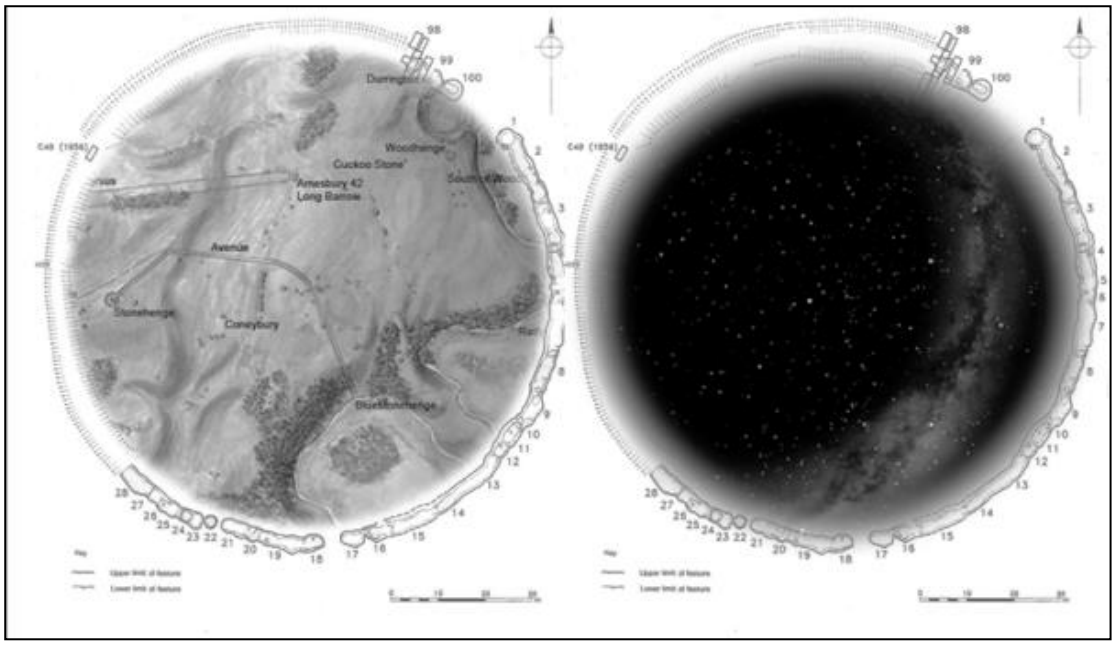


Figure 127. The equivalence between the entrances at Stonehenge and the river Avon (left) and the course of the Milky Way at dawn on the winter solstice (right); (author's images, after Darvill 1997, p.180).

Fig 128 above details the configuration of the Milky Way as seen from Stonehenge c. 2750 BC in the skies just before the rising of the sun at Midwinter. The Milky Way rises in the north east and sets in the south/south-south-west, mirroring both the course of the Avon relative to Stonehenge, and the entrances of the monument.

Figure 128. At dawn at midwinter the celestial river would mirror the transit of the earthly river Avon below, as if one were the reflection of the other.

Looking further afield, aside from two examples (Arbor Low and the Priddy Circles, both of which are located, uncharacteristically for henges, at height) all of the examples in the study sample of this thesis showed a location close to, or indeed built beside or incorporating, bodies of water; and with the exception of five sites – Llandegai, the Devil's Quoits, Maumbury Rings, Cairnpapple and the Newgrange group (excepting Dowth henge) - a correlation seems to exist

between the direction of rivers and the entrances of the henges (Figs 130, 131 & 132: see Appendix 2 for the full list).

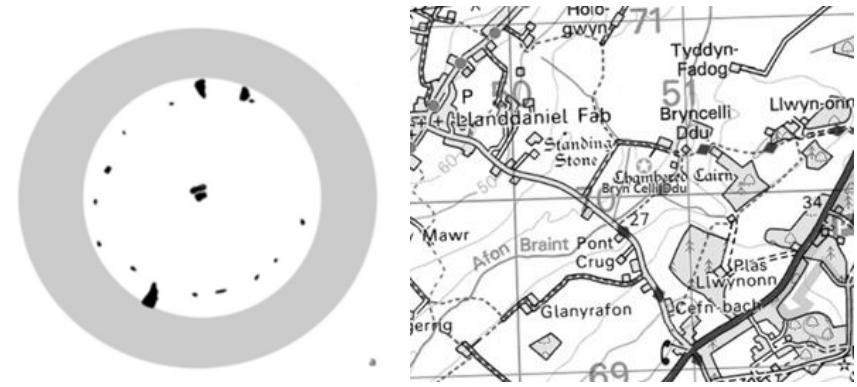


Figure 129. Bryn Celli Ddu Henge (after O'Kelly) and the River Braint – both aligned NE–SW

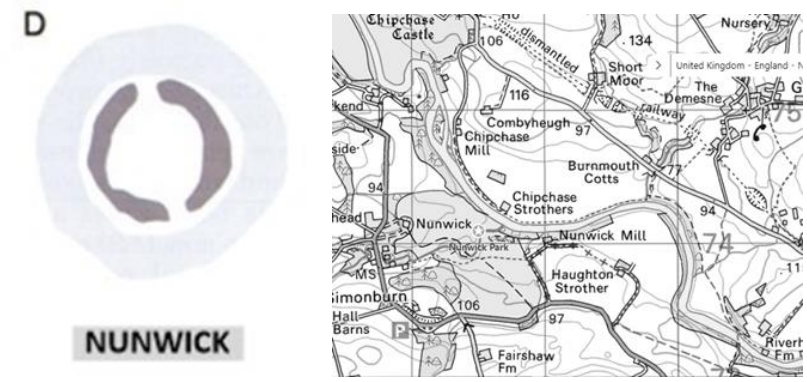


Figure 130. Nunwick and the River Ure, both aligned NW–SE

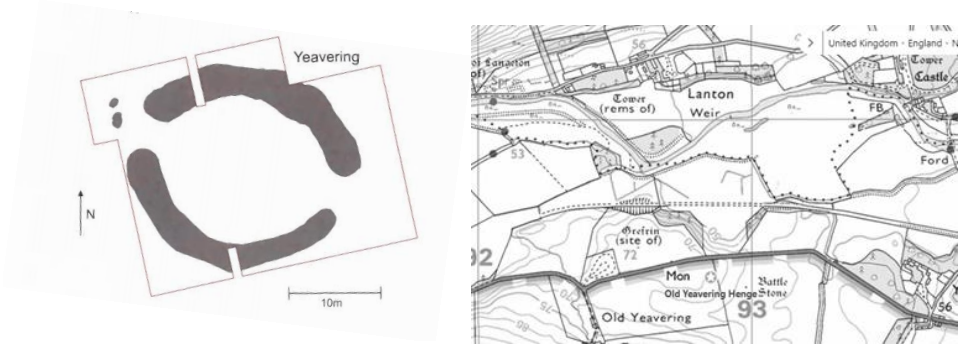


Figure 131. Yeavering and the River Glen, both aligned E–W

This feature, found at c. 85% of sites, is statistically unlikely to be coincidental. Yet such a pattern needn't disqualify the Milky Way hypothesis put forward in this thesis.

What is important is to note that the henges cannot just be referencing the direction of nearby rivers – firstly, because of the small number of sites where this correspondence is lacking, and secondly, because the orientations of the entrances are too restricted to within certain narrowly defined margins to have been reflecting accurate river directions, which obviously are not

limited to within certain ranges either side of north or south, unlike stellar rising and setting positions which are - *it is the correspondence between the* general *river direction in tandem with stellar events that seems to be important*. Appendix 2 also shows the alignment of site entrances to the Milky Way – and shows that an alignment with the entrances can be witnessed in 100% of cases due to the spinning movement of the Milky Way across the sky (Figs 133–135, plus Appendix 2).

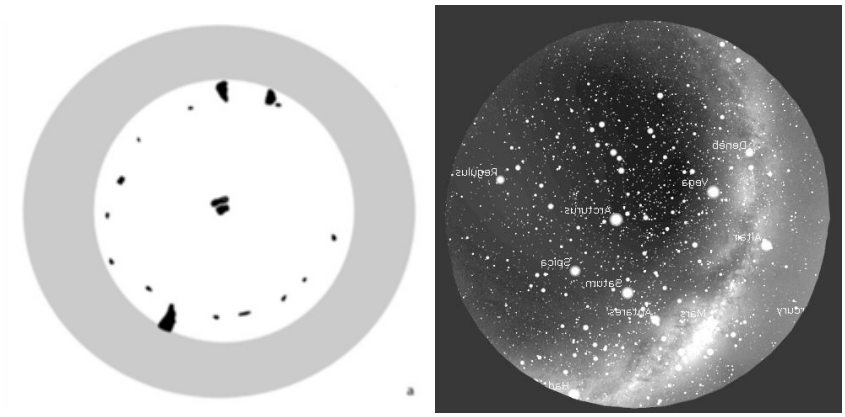


Figure 132. Bryn Celli Ddu henge and the Milky Way

Figure 133. Nunwick Henge and the Milky Way

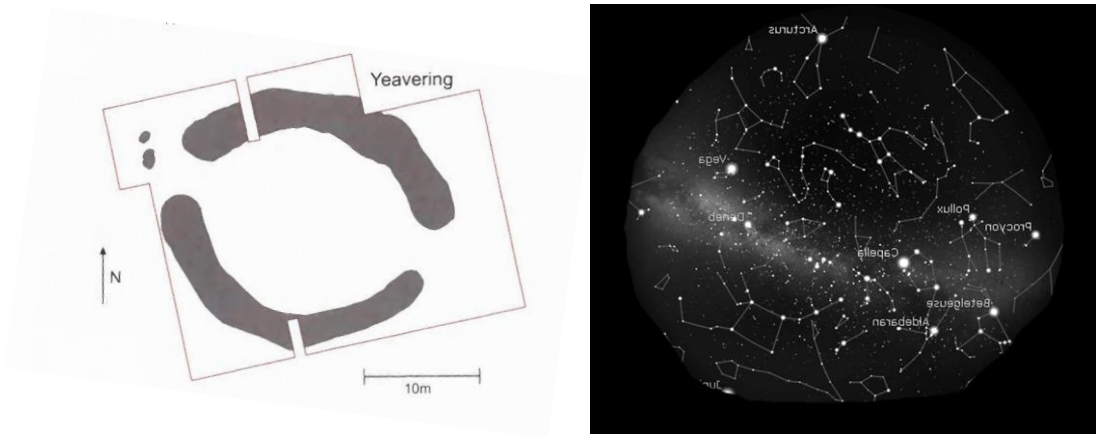


Figure 134. Yeavering Henge and the Milky Way

The most logical and elegant conclusion is that the orientations of the sites for the most part were based on two linked criteria: the direction of terrestrial waters near the site *and* the rising and/or setting points of certain stars in the Milky Way *when the two were in accord*. Therefore, the direction of the terrestrial river defined the type of stellar alignment – whether the site would align on the rising of Crux/setting of Cassiopeia or the rising of Cassiopeia and setting of Crux, or to the rising/setting of Orion. The alignments are simply too focussed on stellar targets to have been solely based on earthly rivers, just as they are too representative of local river directions for these not to have played a role.

As stated in part one of this thesis, rivers in IE tradition had clear associations with divine cows – such as the Boyne in Ireland (which stems etymologically from Bóand – 'white cow') and in the numerous Don/Danube (*Dhainu – 'she who gives milk') river names. But this was only half the story, for in P-IE myth, it was suggested, the earthly waters are a double of the 'river in the sky', associated in both IE and Near Eastern myth with a divine cow; thus, Bóand was both the river Boyne and the Milky Way (*Bothar Bo Finne* – 'path of the white cow') and Nut/Hathor both the Nile and the celestial 'winding waterway'. Similarly, the Swallowhead Spring at Avebury suggests a derivation from the P-IE *Sawol that yields both 'sun' and 'eye' (Suil) in Irish – reminding us of the solar-eye lost by the Egyptian cow-goddesses and the blinding of Bóand, as well as the Goddess Sulis at Bath, associated with healing springs. If such a myth lay behind the construction of the henges then the correspondence of earthly and heavenly 'rivers' may have been singled out as especially important. Urton (1981, p.38) reports a similar correspondence existing in Andean tradition, where the Milky Way was seen to be in its 'proper' orientation when it matched the direction of the Vilcanota River. Such mirroring, when the world above was in harmony with that below, may have been regarded as an epiphany of the celestial/riparian cow-goddess, to whom we now turn.

5.2 The lozenge and the zig-zag

In part one it was argued that the mythological images of the 'whirling heavenly woman' Uzume revealing herself to the gods in Japanese tradition, and the Greek Baubo ('belly'/'womb') revealing herself to Demeter on the bridge of jests referenced the actions of the Milky Way in what was an astronomically derived myth concerning the rebirth of the sun; and that the galaxy, therefore, in such traditions, was conceived of as female-formed, like the goddesses Hathor and Nut in Egypt.

That the act of revelation corresponded to an obvious and observable facet of the Milky Way led to the suggestion that what was being referred to was the rising and setting of the lozenge-

shaped stars of Crux (part of the constellation of Centaurus) (Fig 137), which in part two was shown to rise and set visibly on the same night around winter and early spring.

This occurrence would have been much more impressive c. 7500 BC when the rising of the midwinter sun and Crux shared the same declination – both emerging from the horizon at the same point, perhaps indicating to an observer that the sun had come out of the womb of the Milky Way. By 3000 BC Sirius had usurped the position, now sharing the same rising point on the horizon as the midwinter sun.

The link between the lozenge of Crux and the womb/vulva of the goddess is one that finds support in the many depictions of the lozenge on female figurines from the Neolithic.

The lozenge/diamond symbol is not uncommon in the Neolithic; the symbol appears on the bellies of numerous Neolithic figurines from Gimbutas' 'Old Europe', as well as on pottery (where it also appears with cattle imagery – see Fig 136, bottom left), and has been interpreted by her as the womb or vulva, an interpretation that seems entirely plausible (1989) (Figs 136–139). While Gimbutas' assertion that such figures are of divine beings cannot be proven, and has been challenged (Fleming 1969, pp.247–61), this is not important for this thesis, as it is only necessary here to show that they are associated with the female form, divine or not. The diamond or lozenge often appears associated with four inlayed dots, which, Wayland-Barber states, were often formed by imprinting the figurines with seeds; later historic folk designs evidenced on textiles from Southern and Central Europe refer to this pattern as the 'sown field'; the lozenge with an internal X is indeed suggestive of a cross-ploughed field, yet the analogy of a planted field is suggestive again of an implanted womb (2013, pp.246, 328–9). If the image is of a sown-field it suggests a symbolic connection between the woman and the fertile earth, both seeded by man. This four-fold pattern of points is precisely how the stars of Crux appear in the sky. If the lozenge was associated with the womb, then the lozenge shape of Crux may have been instrumental in identifying this star group within the Milky Way as a cosmic or heavenly womb, especially given its proximity to the dark region of the 'coal-sack' and given the prior coincidence of the rising point of Crux with that of the midwinter sun c. 7500 BC.

5.21 The lozenge on Neolithic figurines

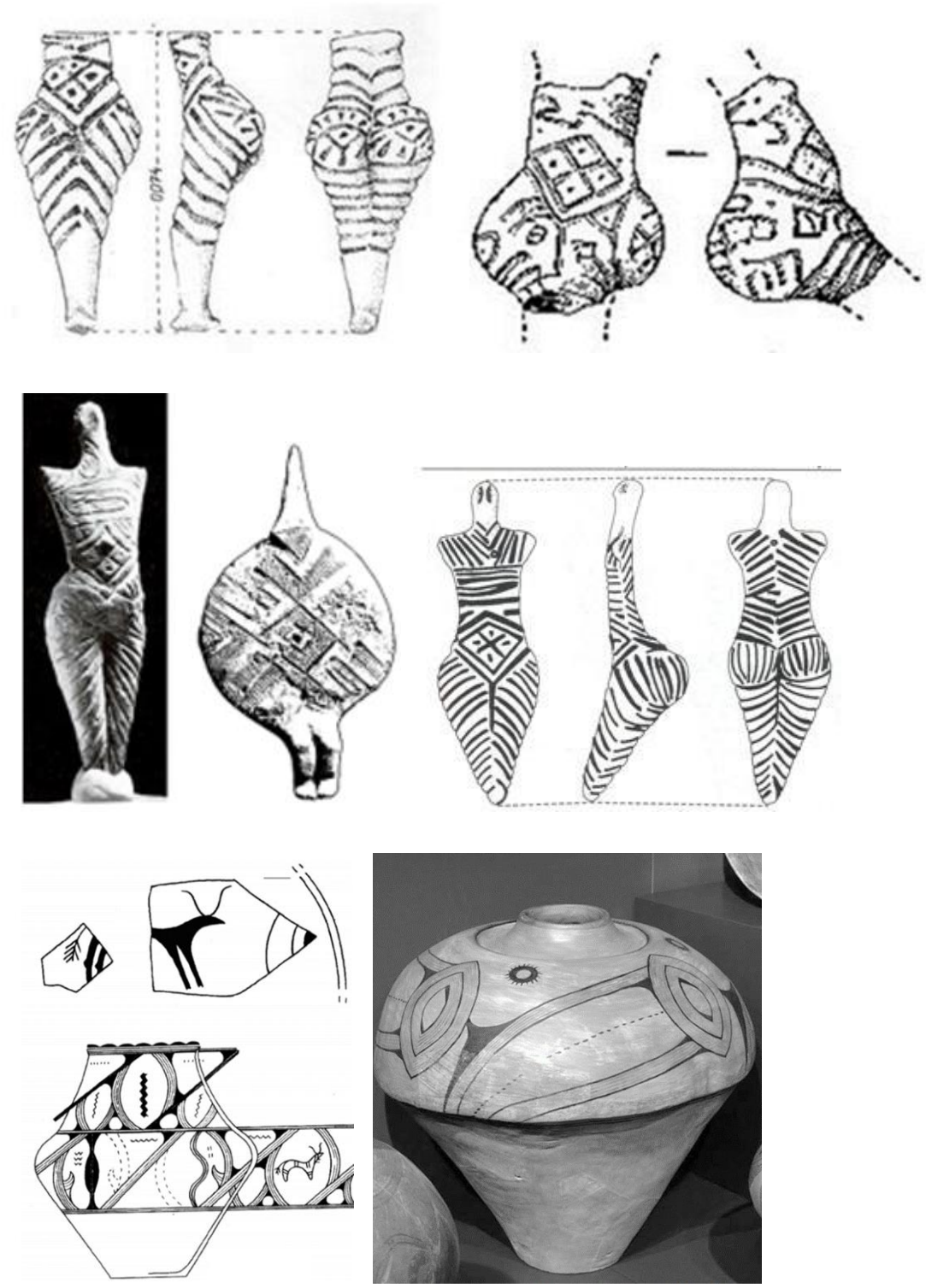


Figure 135. (Top left) figurine from Drăgusani at Botoşani (northern Moldavia, Romania) (After Crîşmaru 1977: 67 fig. 55/2). (Top right): Precucuteni-Tripolye figurine from Lencăuţi (Moldavia, Romania) after (M. Lazarovici 2005: 147, fig. 3-3) (Middle left): Cucuteni Goddess (northern Moldavia, Romania), in Gimbutas 1982: 206, fig. 204; (Middle centre): Maltese 'goddess' in Müller-Karpe (1968: T176/294); (Middle Right): Figurine from Igeşti-Scândureni (Moldavia Romania) After Coman 1980; (Bottom left) Koshylovetska group ceramics of the Trypillian Culture Complex (after T. Tkachuk). (Bottom right) Cucuteni-Trypillian culture pottery from Bilcze Złote (Ukraine). 3900-2700 BCE. Archaeological Museum in Kraków

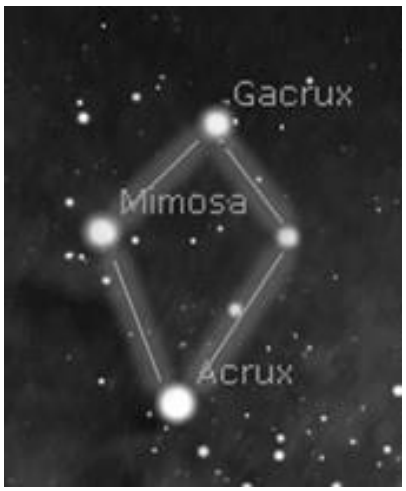


Figure 136. The stars of Crux formed in to a lozenge.

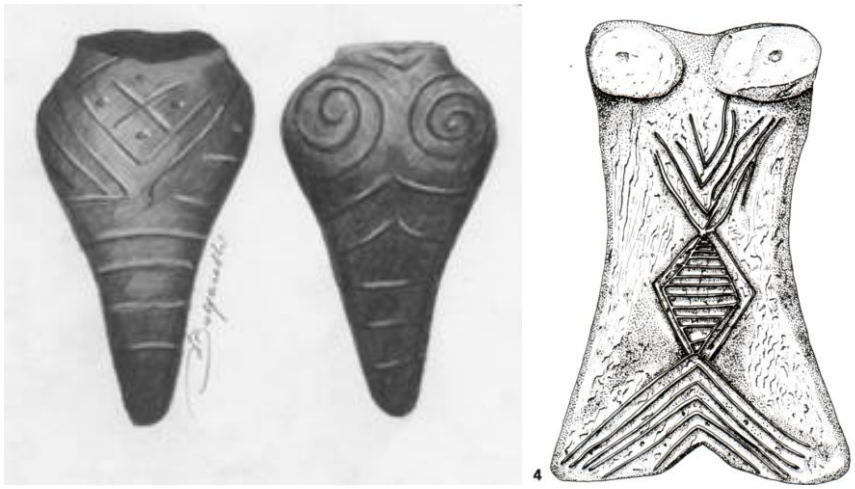


Figure 137 A figurine from Luka Vrublevetskaja (Western Ukraine;. bone fragment depicted a female body from the Iron Gate Region of Romania, 8000 BC. after Gimbutas 1989, p.5).

Figure 138. Lozenge motif from a Vinca ceramic (left) and Linearbandkeramik pot (right)

Such lozenges are the mainstay of Neolithic art in Britain – from the forms found on Grooved ware artwork, synonymous with the henges, to the later Bush Barrow lozenge – but also common on megalithic petroglyphs and artefacts such as the Folkton drums (Fig 140).

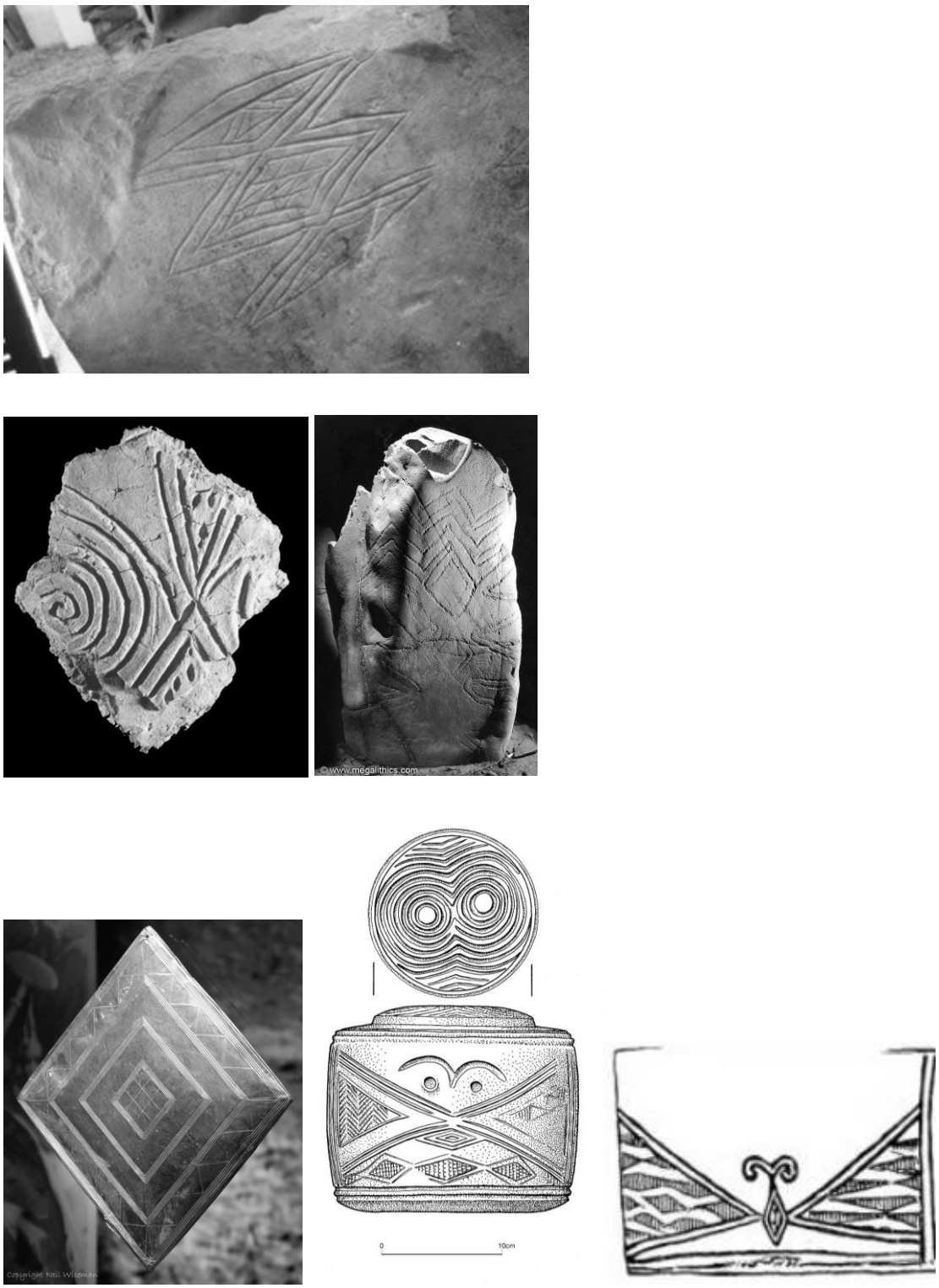


Figure 139. Lozenges from British contexts: top and middle left from Orkney, middle right, Barclodiad y Gawres, bottom left the Bush Barrow lozenge and bottom middle and right, the Folkton Drums.

However, any attempt to link the British lozenge directly to the Old European female form is hampered by the dearth of anthropomorphic representations found in the British Neolithic, and the lack of evidence for a direct continued material tradition between the Balkans and Britain – for the tradition of such representation is not a constant from one area to the other. As the

Neolithic spreads north-east from the Balkans in to Central and Western Europe this representative tradition peters out archaeologically, so that where Old Europe witnesses thousands of such figurines (Hansen 2007, p.203) the number found in neighbouring Linearbandkeramik traditions in the Danube basin are numbered in the hundreds (Becker 2011, pp.31–33). In Western Europe there is evidence for later figurative traditions, but these may or may not represent a continuation of an original practice. The decline in figurative representation does not necessarily mean the process totally ended or the symbolism expressed in such representations was lost: such imagery may have ceased to be produced, but it is just as likely that it was transferred to less hard-waring forms, such as textiles or wood that simply have not survived in the archaeological record, but in which medium the new cult symbols were recorded. Scarre suggests it is possible to see 'a connection between figurines and farming, with a new cosmology bringing new ritual practices in which representations of the human form were increasingly accepted and indeed required.' (Scarre 2017), though he qualifies this statement saying that the rarity of such sculptures in the west is to be set against such a simplistic analysis. That similar imagery occurs in later traditions further west despite a temporal hiatus suggests the latter, or that perhaps a taboo against such representations had been lifted or forgotten. Where figurative and artistic traditions do occur they are in marked similarity to the older forms – we find such traditions arising not just in the megalithic art of Britain and Ireland, where it has taken on an almost wholly abstract form, but also in the funerary art of megalithic traditions in France and the Iberian Peninsula. There is a tendency to represent female forms with accentuated eyes and breasts, though not the lozenge, except in Britain.

The menhir-statues of France, mostly those found in the Marne region, are the most clearly anthropomorphic of the later representations (Villes 1998), more so than the British examples (Figs 141–142). Breasts are pronounced in these contexts, and there is a marked link between these female forms and tombs (Scarre 2008). A similar tradition exists in south-west Iberia – where we also find small anthropomorphic schist plaques in funerary contexts in the late fourth and early third mellenium BC (Scarre 2017, p.888) (Fig 143).

Scarre argues that 'The schist plaques of southwest Iberia might indeed be considered miniature versions of the painted orthostats present within megalithic tombs such as Antelas, Maoa Grande, Areita, or Mamoa de Alagoa... If the schist plaques, and indeed the other figurines, represent ancestors, then so might the decorated orthostats.' (2017, p.885). The schist plaques seem to have been for funerary use only as they show little wear – but may represent a permanent form of an object that in life may have been made of textile or wood.

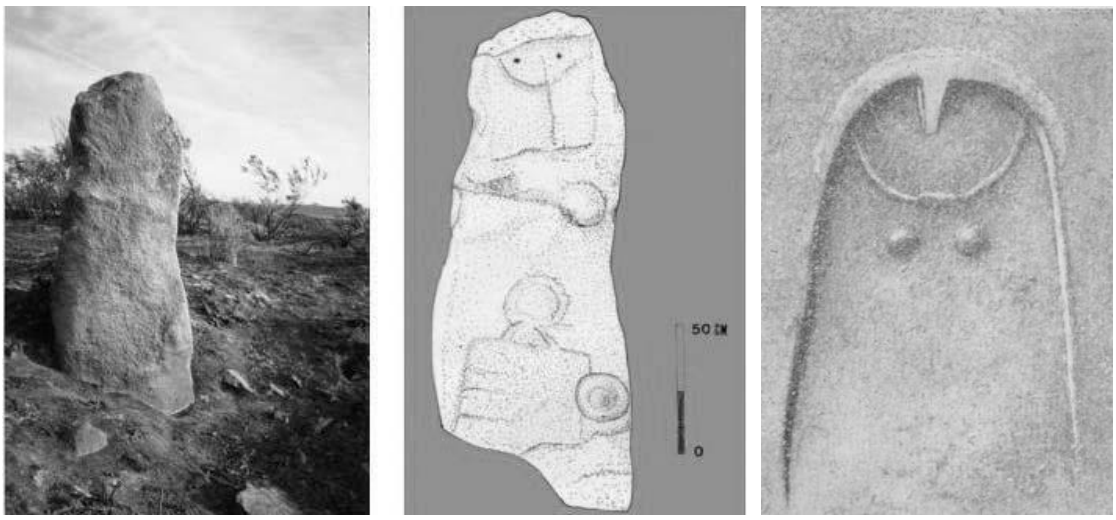


Figure 140. Left: Hypogées du Razet, Marne, France (Scarre, C 2008); Right: Cimetière de Razt, Coizard, Marne (ibid)

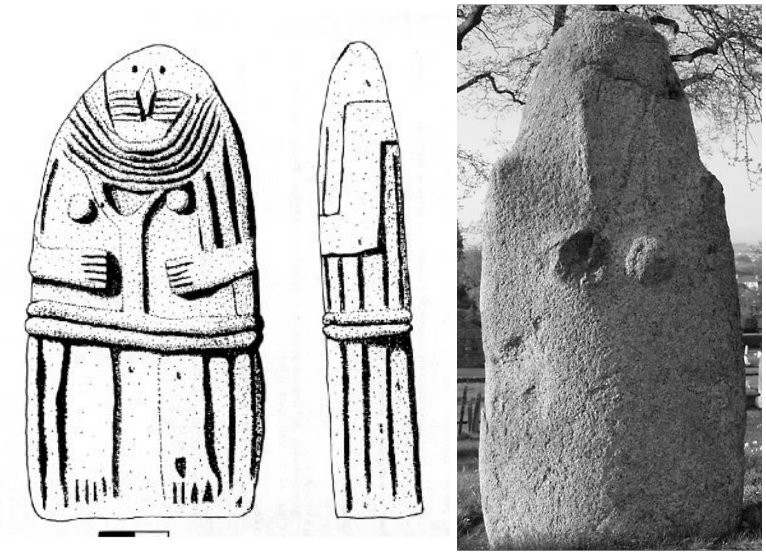


Figure 141. Right: Statue from Saint-Sernin-sur-Rance (Aveyron)(after Scarre 2008) and Right: Castel, Jersey

Figure 142. Schist plaque from placa del Anta da Comenda 2, Portugal (Scarre)

A common feature of the Continental anthropomorphic representations is the depiction of breasts: 'Paired breasts, often accompanied by necklaces, are found in a series of different

contexts in the Seine basin, downstream of Paris, in the Marne valley, and in northern and western Brittany' (Scarre 2009). Whereas in Kerguntuil allée Couverte in Brittany we find rows of breasts (6 pairs, with another pair above)– with 'U'-shaped 'necklaces' below them (Fig 144). An alternative explanation is that these 'necklaces' represent the curve of a pregnant belly – but in some cases they appear above the breasts rather than below. Either way, there is a clear link between places of the dead and a female figure or figures; we cannot say whether the depiction of breasts (and as we will see lozenge/wombs in British versions) on such figures is merely an identifier of sex or whether what is being stressed is the idea of fertility or nourishing.

FIG. 5 – Row of paired breast carvings with necklaces below, from *allée couverte* of Kergüntuil in northern Brittany. (Photo: Chris Scarre).

Figure 143. Carved breasts from allée Couverte tomb at Kerguntuil, Brittany (Scarre 2008)

The depiction of breasts is of interest. Similar breasts have been found on frescoes from lake-houses in Ludwigshafen Seehalde, Switzerland (Figs 145 & 146). Here we see representations that are still gynomorphic but less figurative than the French examples and recall some of the British examples, such as the Folkton Drums.

Figure 144. Plaster breasts from Ludwigshafen Seehalde (Landesmuseum Baden-Württemberg)

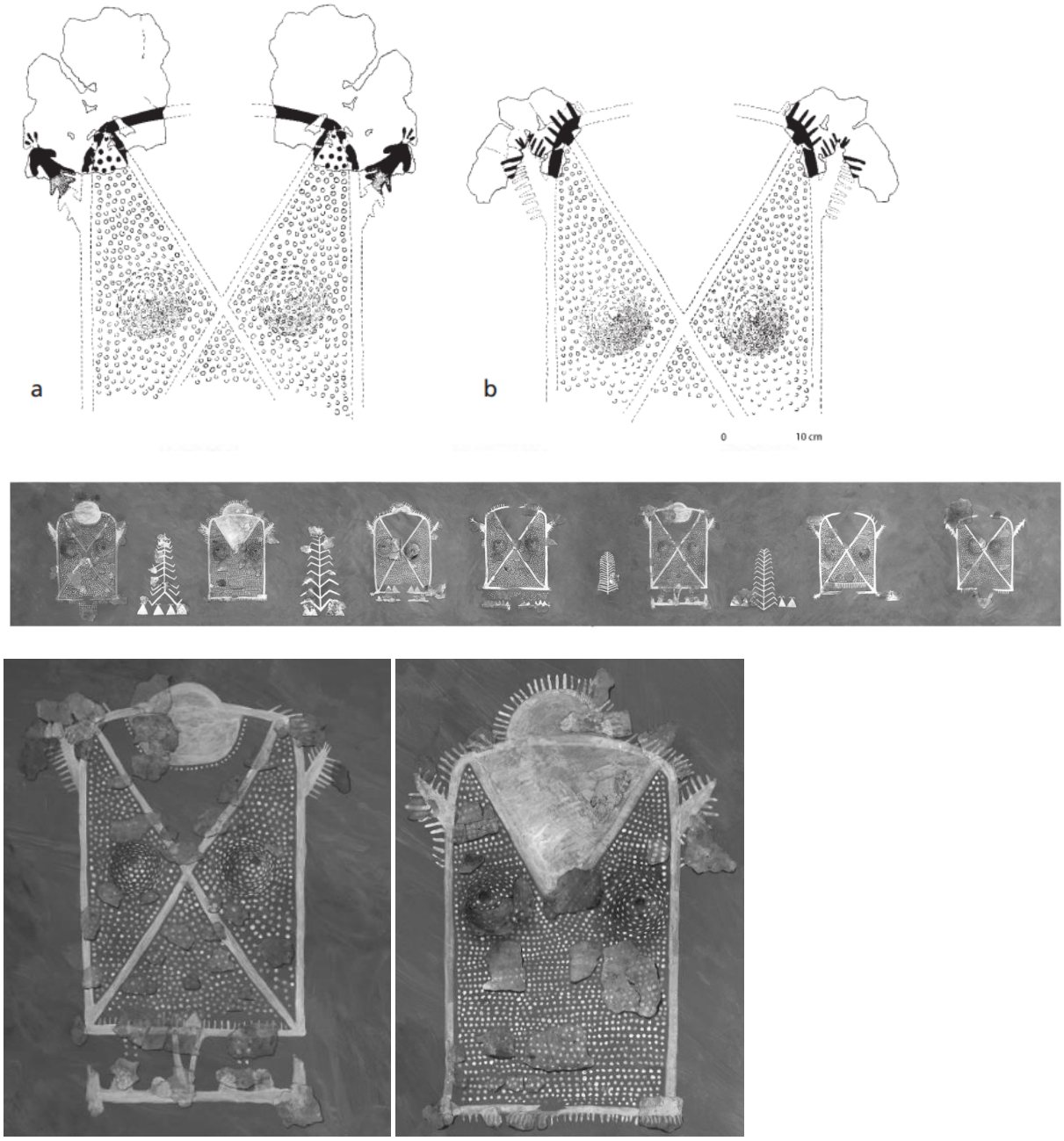


Figure 145. Reconstructed figures from Ludwigshafen Seehalde (Landesmuseum Baden-Württemberg; https://www.pfahlbauten.at/blog/die-busenwand-aus-dem-bodensee)

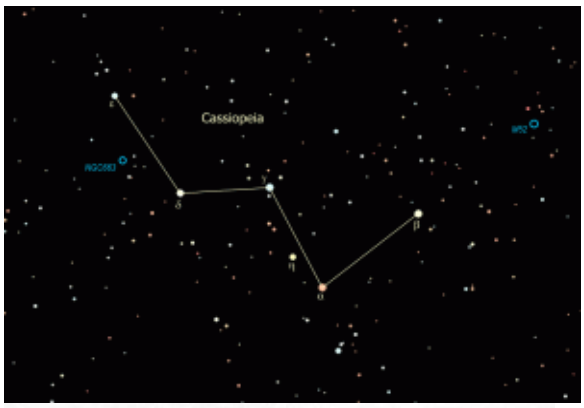
The 'head' of the females are suggestive of a rising solar image, complete with rays – which, when depicted in conjunction with the (arguably stellar) be-speckled breasts suggests these are cosmic images of a celestial female, all set within a shape reminiscent of the schist plaques and bearing a large 'X' shape across the body, and strange almost twig or branch-like 'arms'. If such figures were celestial – what might have been the heavenly analogue of the breasts?

There seems to be a connection between breasts and a zig-zag or wavy line – seen in eye-goddess images from Syria (c. 2600 BC) and Iberia (c. 2500 BC), and on a much earlier figurine from Italy (c. 5300 BC) (Fig 147).

Figure 146. Engraved Eye Idol from Tell Brak, Syria (left), Sierra de Moron, Spain (Middle) (Gimbutas 1989, p.56) and Passo di Corvo, Italy (right) showing M or W patterning

Crawford argued the Iberian examples were influenced from by the Syrian (1957) – yet such comparative iconography needn't imply direct contact between these cultures, though Crawford's ideas have been supported of late (Schuhmacher 2013, pp.7–20). Similar 'W' or 'M' shapes appear on the Iberian schist plaques: If the lozenge had a possible analogue in Crux then perhaps a similar stellar analogue existed for the 'M' or 'W' shape found in the iconography of the figurines and in Cucuteni-Trypillia pottery, which in some cases appears below bucrania (Fig 148). The most likely candidate is the group of stars we know today as the constellation of Cassiopeia.

This supposition is based on the alignment so far discovered in the sites in this thesis – but it is supported by the traditional Welsh name for the constellation, Llys Dôn (Guest 1877, pp.436–437), that is 'Court of Dôn/Danu', the mythological figure whose name stems from 'she who gives milk' an apt name for a breast-shaped constellation found within the Milky Way. One might ask, however, if the 'W' motif on the Iberian schist plaques referred to the prehistoric form of this constellation why the funerary contexts in which they are found do not display alignments to these stars? I would argue that the images might still represent a Milky Way goddess, even if the burial sites lacked orientation to this heavenly body – much the same as the identification of Egyptian coffin lids of the New Kingdom as depicting Nut as the night sky or Milky Way is not nullified because they are not oriented towards the galaxy.



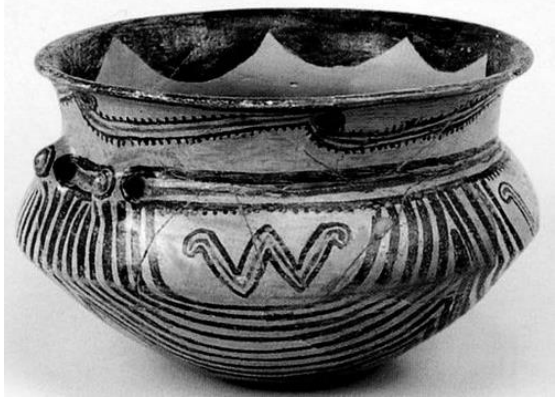


Figure 147: Top Left: The 'W' of Cassiopeia; Top Right and Bottom: 'W' motif on Cucuteni pots (Piatra Neamt Museum, Romania)

Anthropomorphic figurines found in Orkney also bear 'W' or 'M' shaped motifs, on the chest or as eyebrows (Fig 149), but as we saw with the figure of Baubo there are correspondences between the face and the body, so that other examples, such as found at the Holm of Papa Westray (Fig 150) might equally represent breasts and nipples as eyes and eyebrows, while also suggesting bucrania.

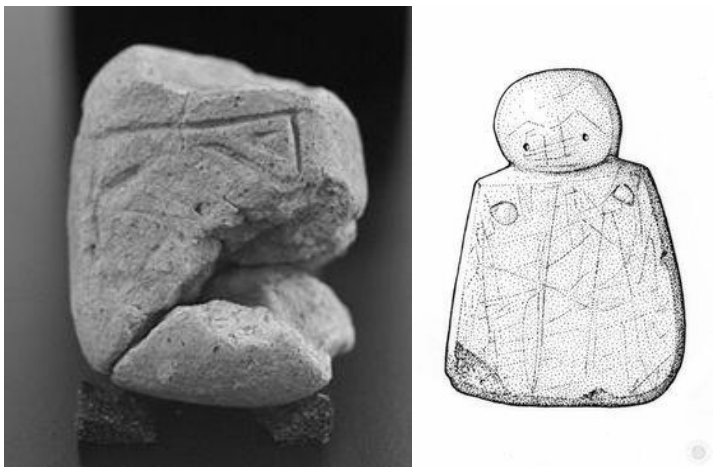


Figure 148. Neolithic figurines from Orkney (Right image: Historic Scotland)

Figure 149. 'Eyebrow' motifs from the Holm of Papa Westray tomb (photo: Douglas Hourston)

5.22 The Folkton Drums – eyes and breasts

Similar iconography can be found in Britain on the Folkton drums (Fig 151). The Folkton drums provide examples of all the symbols we have been discussing so far: the lozenge, which is both vulva and mouth – and of the eyebrows/eyes, which are also bucrania and breasts. The placement of these objects in a child's grave also seconds such identification – as they were found behind the child's head and hips – precisely the bodily locations referenced by the depictions (Greenwell 1890). The purpose of the objects is unknown – but as they are unique – paralleled only by a recent undecorated or eroded 'drum' found at Lavant, Sussex – they are usually explained as a permanent representation of an object usually made of wood or textiles. Yet these are not just copies of another object, as recent analysis shows reworking and replacing of the artwork, suggesting an object long in use (Jones *et al* 2015). One might suggest they offered a similar function to the Iberian schist plaques, perhaps embodying an ancestor or divinity, which are also suggested as representations in stone of originally organic objects.

In illustration 1 of Fig 151 the eyebrows of the face are made up of horns, which appear in illustration 2 without eyes as simple horns above a vulva-like lozenge (Crux?) – but also seems suggestive of a butterfly; the same lozenge, sideways on in illustration 1 forms the mouth; note also in illustration 2 of Fig 151 the 'side panels' that separate the 'face/vulva' from the 'X' shape on the opposite side, are formed from a lozenge on one side and 'W' shapes on the other. As to this general 'X' shaped pattern of the drums, this is a common image on Neolithic art, but it is most obviously associated with female representations on the moulded frescoes at Ludwigshafen Seehalde that had a clearly astronomical aspect – it is possible that this shape may be astronomical too, representing the position of the Milky Way as seen at both dusk and dawn around the winter solstice, that is as Orion is rising and as Crux is setting. Moreover, the shape of the drum itself suggests circularity, again perhaps referencing the Milky Way (Fig 152). Alternatively, the X might be a visual representation of the rising and setting points of the sun at the solstices, in which case their depiction across the body of the female suggests, again, that it is a celestial figure that is being depicted.

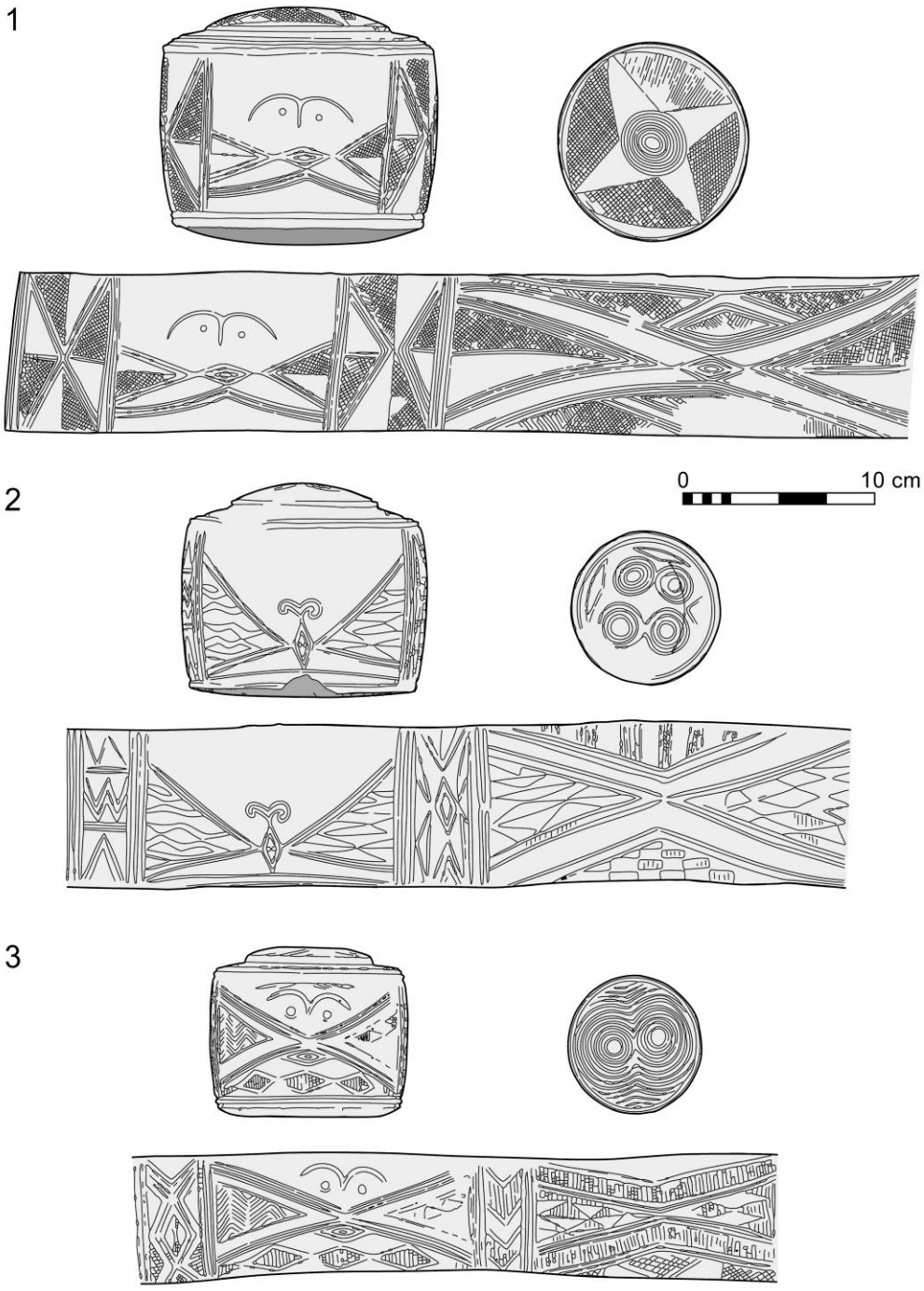


Figure 150. The Folkton Drums (Longworth 1999)

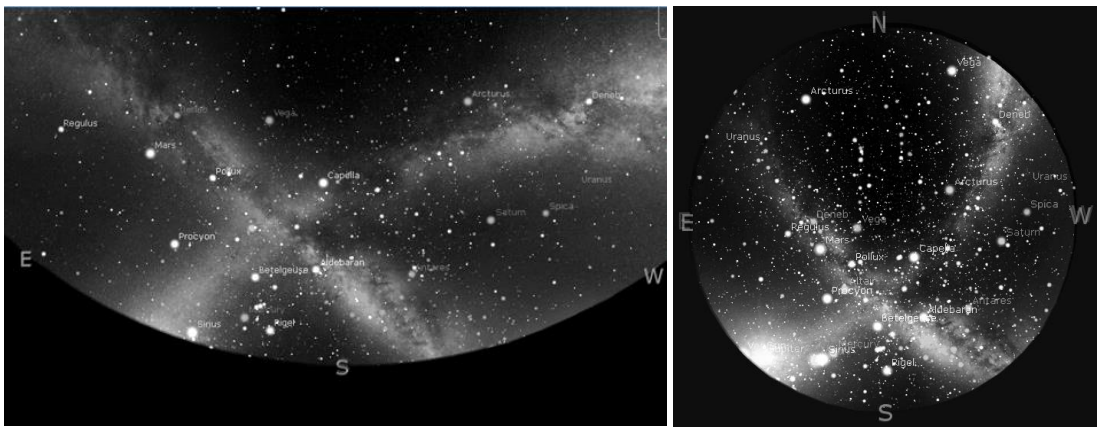


Figure 151. The position of the Milky Way after sunset and before sunrise superimposed form a clear X shape.

The Folkton drums provide us with proof that the imagery of the 'face as womb' was present in Neolithic Britain, in much the same pattern as seen in Old Europe, suggesting a continuation of symbolism – maintained perhaps in other plastic or perishable forms. Arguably, the imagery was accompanied by a shared set of religious meanings.

Examples of face/womb/belly as bucrania can be evidenced in artefacts from elsewhere in Neolithic Europe. Below left a Cycladic vessel (Fig 153) bears a bucrania in place of a womb (and the whole representation resembles a face with the breasts as eyes), while an image from Neolithic Brittany (Fig 154) according to Gimbutas, holds a bucrania over her belly. Fig 155 shows a triangular altar stone from the Tisza culture (6th millennium BC, Hungary) whose face lies at the bottom of the figure, in the triangular pubic area, under a meandering pattern that Gimbutas associates with cosmic waters. An example from the Cucuteni-Tripillya culture shows an entire female form, with accentuated pubic triangle, depicted on a stylised bucrania-shaped bone plaque (Fig 156), while the pottery vessel shown above (Fig 148, bottom) portrays the 'W' shape in relation to bucrania.

Figure 152. Pottery vessel from Cyclades c. 2000 BC. (Gimbutas 1989, p.266) Figure 153. Goddess with bucranium over belly (after Gimbutas 1989)

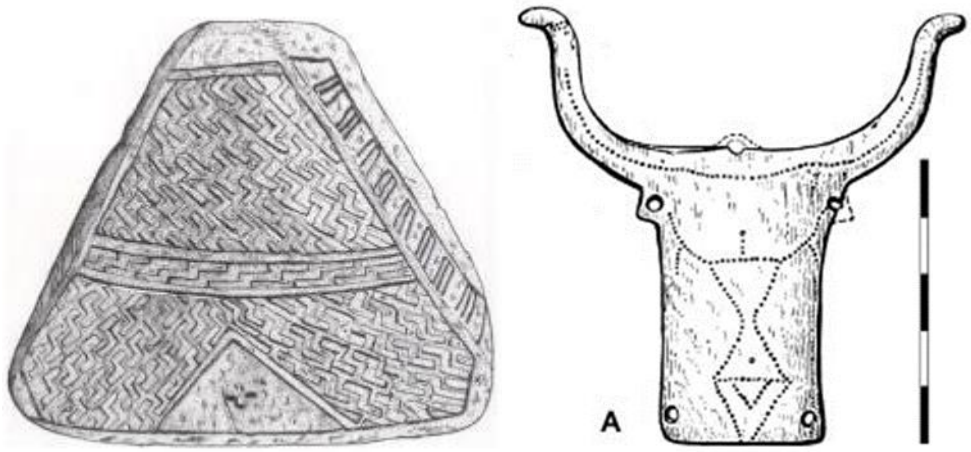


Figure 154. Tisza culture female altar with face in the 'womb' area. (after Gimbutas 1982, p.130) Figure 155. Female form picked out on carved bucrania from the Verteba Cave, Cucuteni-Trypillia culture (Nikitin 2017, p.2)

The similarity of these depictions suggests a basic Neolithic set of symbols of representation of the female form that show an interest in the eyebrows, eyes and mouth and breasts and vulva, the one set of symbols analogous to the other – in a manner suggestive of a visual pun, such as made use of by the Surrealist Magritte (Fig 157).

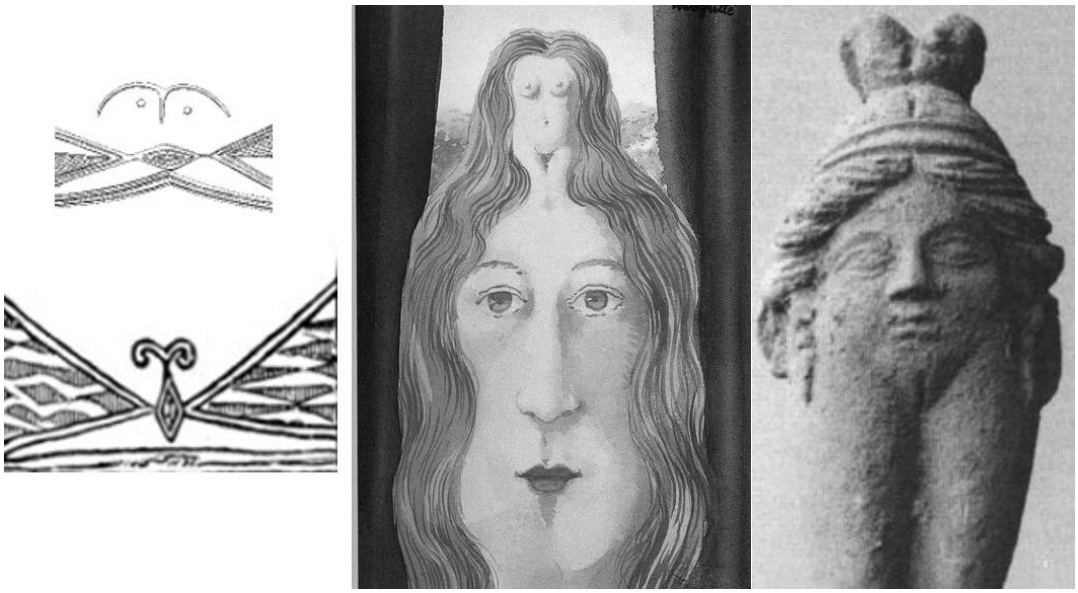


Figure 156. Breasts/bucrania as eyebrows and mouths as vulvas – a visual 'pun' as seen on the Folkton Drums (left)t, a Greek Baubo figurine (right), and on a painting by Magritte, (centre).

This analysis has suggested that despite there being no direct evidence of continued, uninterrupted stylistic tradition, the appearance of the female form in megalithic art in Britain and on the Continent share enough similarities with the depictions found in 'Old European' contexts to enable us to suggest not only that such traditions did survive intact, but that that the symbolic 'language' represented in such images (that of lozenge as womb/mouth and 'W' or

'M' pattern as eyebrows/breasts/bucrania) matches the puzzling symbolism of Baubo, and thus the divine figures of myth connected to the Milky Way.

5.23 Bronze-Age 'dancing' females: A Milky Way analogue?

Before we leave this investigation of female symbolism, it is worth mentioning another possible expression of Baubo/Milky Way symbolism in Prehistoric European imagery. The lewd dances of Baubo/Iambe, Hathor and Uzume in myth recall the 'dances' depicted on imagery from Bronze Age Denmark, most notably on petroglyphs and the bronze figurine from Grevensvænge, originally thought to have been part of a model ship (Figs 158 & 159).

Figure 157. 'Somersaulting' Bronze Age female from Grevensvænge, Denmark *Figure 158. 'Somersaulting' female figure with ship from Sweden*

Might such Scandinavian 'dancing' females have shared the same symbolism as these mythical figures? That such arching/dancing female figures are located in the sky is suggested by their association with ships (Fig 159); such boats are unequivocally sky-transports, surrounded by celestial imagery they bear the sun across the sky (Kaul) (Fig 161, top right); if the dancing female is in the sky comparisons to the over-arching form of Nut is unavoidable (Fig 160).

Further supporting the Nut connection is the dress of the Grevensvænge figurine – she is shown wearing a corded skirt, and such a skirt has been found on the person of a teenage girl buried in an oak coffin at Egtved in Denmark. Glob and Kristiansen amongst others have suggested that this girl may have been a 'sun-priestess' and may have performed a fertility dance in the manner of the Grevensvænge figurine. That she wore nothing beneath the revealing string skirt suggests that such a dance would have had been not dissimilar to the 'lewd' dances of Baubo, Uzume and Hathor – and indeed may have been an exact enactment of that myth, further suggesting her acrobatics were meant to evoke the over-arching galaxy. Of interest, then, was the placement of a solar-disk on her belly (Fig 161).

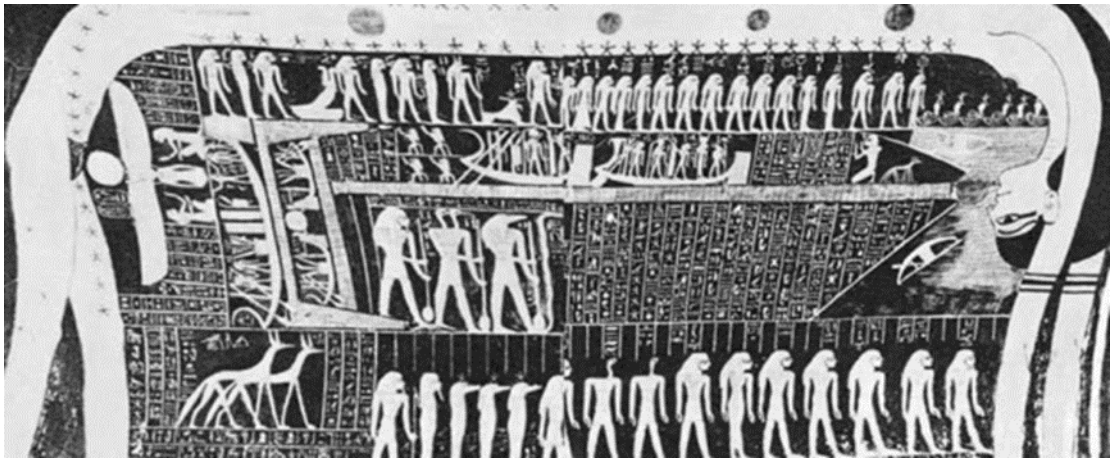


Figure 159. The Bronze Age Scandinavian figures bear some resemblance to the over-arching form of Nut (tpmb pf Ramses VI, c.1140 BC)

There are numerous instances of solar-disks appearing on the bellies (wombs?) of females in burials during this period, for example from Hesselagergård and Tobøl. The Hesselagergård woman was buried with her hands crossed over her solar-belt-plate in a manner suggestive of the cross-within-circle solar image from Bronze Age Danish art (Fig 162, top right) that mirrors the bronze wheel that was placed on the belly of the Tobøl woman (Fig 161, bottom right).

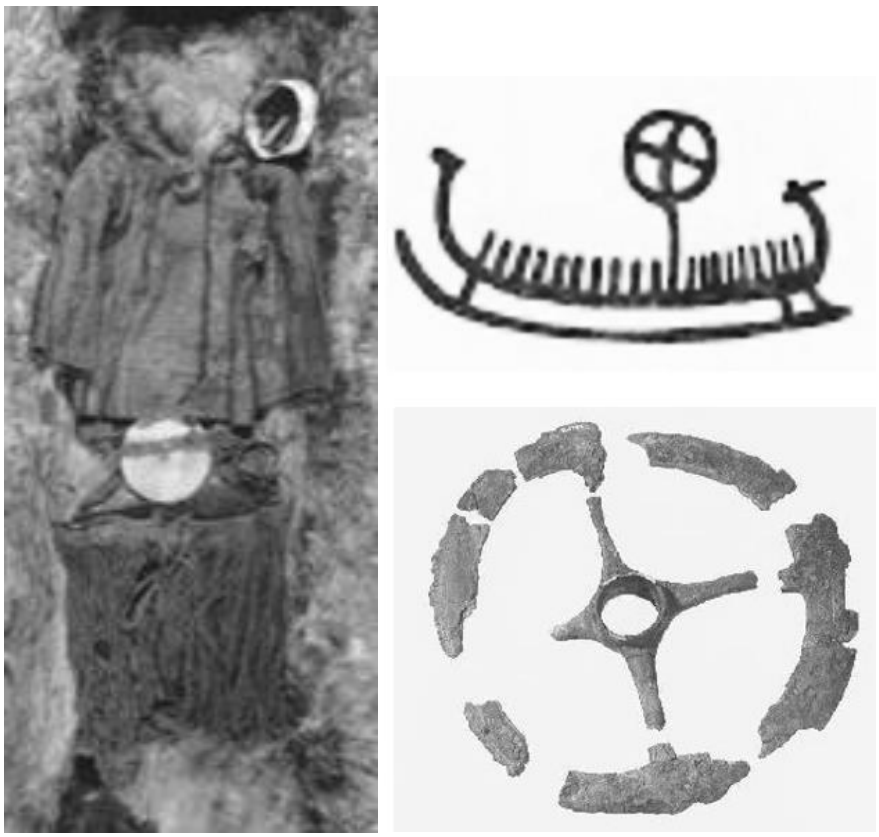


Figure 160. Remains of the Egtved girl (left) showing Bronze (solar?) disc over her belly, a bronze wheel was placed on the belly of the Tobøl woman (bottom right) was a solar-symbol, as shown on petroglyphs of solar-boats on Bronze Age Scandinavia (top right).

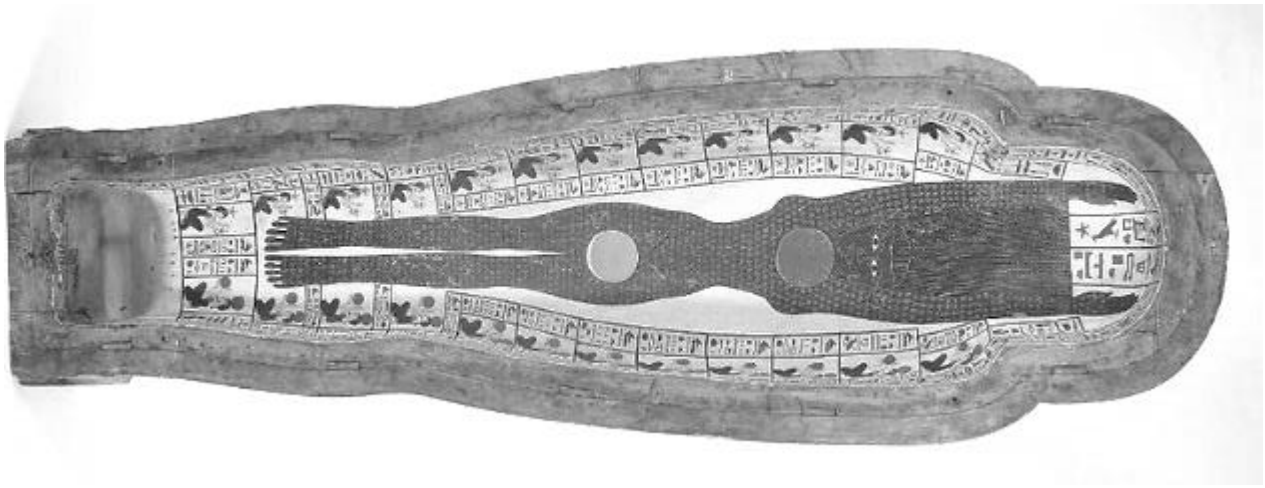


Figure 161. Coffin of Peftjauneith, 26th Dynasty, showing a depiction of the Milky Way Goddess Nut on the lid, with solar symbol over her belly

The positioning of the sun-disk on these females mirrors the placing of the sun on the body of the Egyptian Nut as shown on Egyptian coffins in later periods (Fig 162), though such imagery can be argued as stemming from much earlier imagery that sees Nut as over-arching the dead King, protecting him and concealing him from Seth, so that he can be reborn (Pyramid texts Utterance 427, Faulkner 1969, p.141). Similar imagery of the sun on the belly is found at Çatalhöyük (Fig 163)

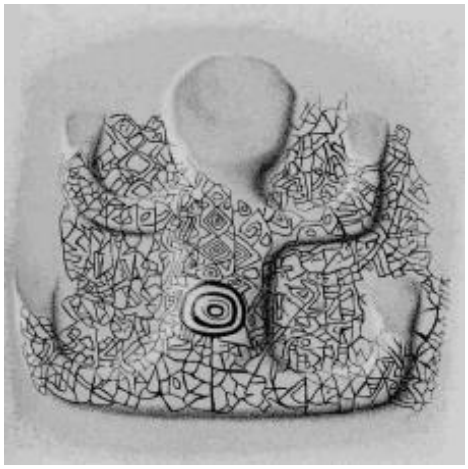


Figure 162. 'Goddess' from Çatalhöyük with solar symbol over her belly (after Settegast)

Although facing skywards, the Danish dancers nevertheless have definite echoes to the Egyptian figure, especially when the location of the sun-disk on the belly of the burials is factored in. If, then, girls or priestesses like the Egtved girl had somehow embodied the Milky Way, might their dancing, like that of Baubo or Uzume, have been the same erotically-charged dance recorded in those myths, an act that was performed to encourage the sun to rise?

This somersaulting figure does not appear in British megalithic art, but perhaps the arches of the necklaces found on the Continental examples are Milky Way analogues? There are similar images from Knowth which suggest the curve of the Milky Way (Fig 164), yet there are anthropomorphic figures in the passage graves that help further cement the connection between the figures and the Milky Way.

Figure 163. curvilinear shapes from stone K86 at Knowth – representing the Milky Way? (https://www.knowth.com/knowth-kerbstone86.htm)

Passage Grave art has been widely discussed, from Shee-Twohig's analysis (1989) to theories such as Dronfield (1996) and Lewis-Williams and Pearce (2005) that look to psychological or biological points of origin, while other more popularist studies have suggested a calendrical

function (Brennan 1994). The following section will briefly deal with this symbolism as found in the stones of the passage graves – but this needs to be put in context. In providing such a context, this section will detail the orientations found in these monuments; this will act a resume of the argument so far, allowing us to conclude the exploration of stellar alignments before we move on to a discussion of faunal remains and symbolism in Chapter Six.

5.24 Alignments in the Passage Graves – the evidence of Megalithic Art

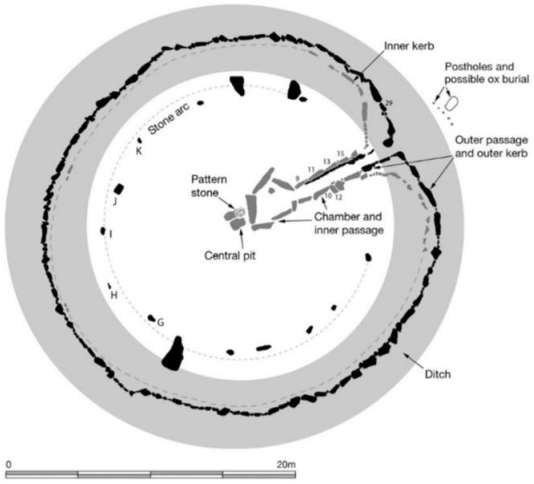


Figure 164. Schematic Plan of Bryn Celli Ddu (Burrow 2010)

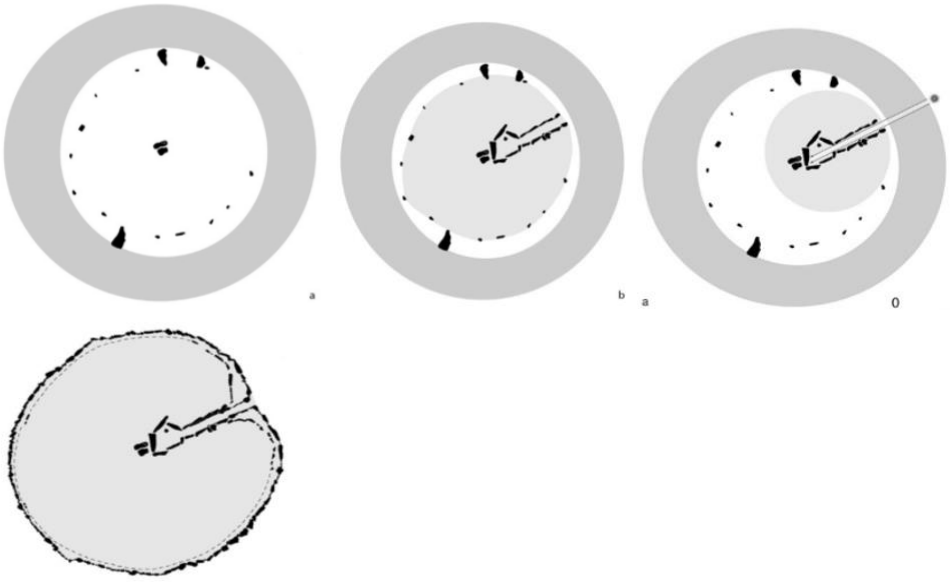


Figure 165. First stage of Bryn Celli Ddu according to a). O'Kelly, b). Eogan and c). Burrow; d). shows the final form of the monument (Gibson and Simpson 1998, pp.9–10)

Bryn Celli Ddu ('the mound in the dark grove') (Fig 165) is a passage grave lying on the eastern side of the Isle of Anglesey; there is considerable disagreement over the development of the monument, with some authorities seeing the site as originally a henge with an interior stone circle or arc (O'Kelly 1969), followed by a passage grave whose extent covered the original

circle. Others see the circle and mound as contemporaries (Eogan 1983, pp.135-6; Bradley *in* Gibson and Simpson 1998, pp.9–10); a variant of this view is forwarded by Burrow (2010) who suggests the original mound was small enough to fit within the circle, only later to be extended over the stones (as we see in Fig 166 c); despite these differences, all agree on the 'final' form of the monument (Fig 166).

The passage at Bryn Celli Ddu is aligned 62–66°, which means that the rays of the midsummer sun (that rises at 47°) can penetrate the passage and shine into the chamber when the sun is roughly 8.5° above the horizon; this elevation allows the sun to send its light into the passage over the blocking stones, possibly through a 'lightbox' such as that found at Newgrange (Lynch 1991)). This orientation to the solstice at the opposite end of the year from passage grave alignments found in Ireland and Orkney (Maes Howe) initially suggests a different emphasis than these other sites, though still within the remit of solsticial solar patterns. Yet, this is not to say that there are no midwinter alignments at Bryn Celli Ddu - for the placing of the tomb in the landscape suggests otherwise.

From the mound and its environs, the view to the east, towards Snowdonia and the Carneddau mountains 15 miles distant is impressive, making a dramatic vista across the south-east quadrant of the horizon (Fig 167) – in the same direction, 150m away, is the River Braint and, beyond it, the Menai Straits.

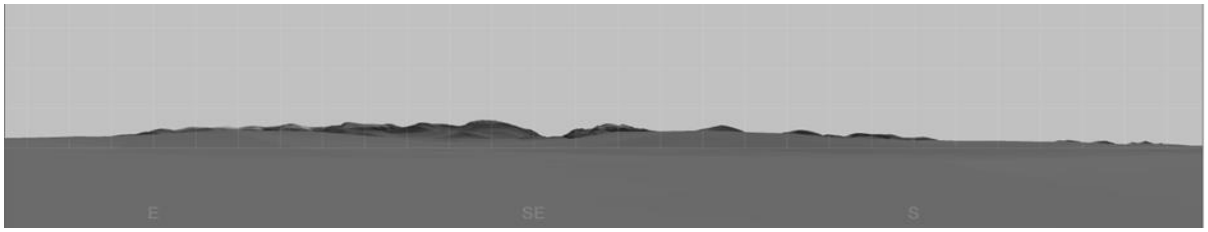


Figure 166. The SE horizon as seen from the Bryn Celli environs.

When looking towards the mountains the eye is drawn to the central valley of the Llanberis pass (Fig 168), which lies at the centre of the range when viewed from Anglesey, lying between two 'peaks'.

Figure 167. Close-up of the Llanberis pass at the centre of the Snowdonia massif as seen from Bryn Celli Ddu.

This dip, from Bryn Celli Ddu, marks the rising point of the midwinter sun (Fig 169). The existence of a natural mound of rock with cup markings to the north-west of the passage grave from which the same view of the Snowdonia massif can be seen suggests the possibility that this natural feature may have been used to sight the same phenomenon before the later passage grave was built.

It is a feature that echoes other examples of twin hills and heavenly bodies, such as the setting of the midwinter sun and of Sirius at Stenness (Fig 170) and the Ring of Brodgar, that we have previously equated with the Egyptian symbol for horizon and the Minoan horns of consecration (Fig 171).

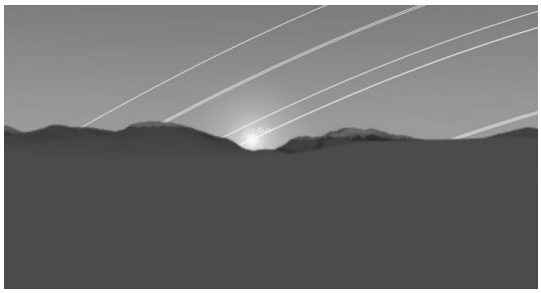


Figure 168. The midwinter sun rising from Llanberis pass

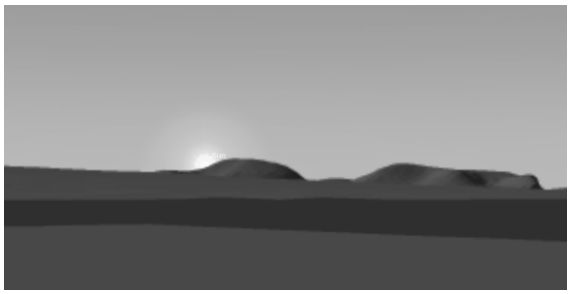
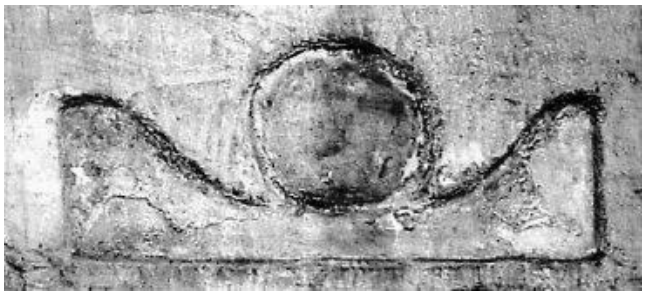


Figure 169 Midwinter sunset from the Stones of Stenness.



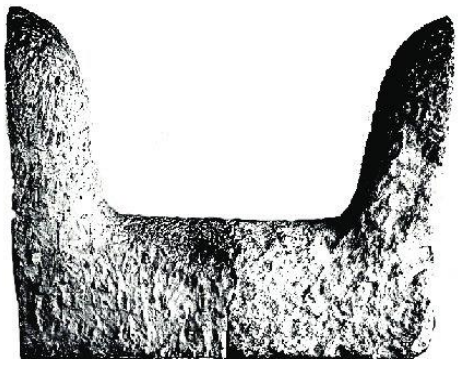


Figure 170. The Egyptian symbol for horizon, Akhet (left) is formed from the sun rising between two mountain peaks and resembles the Minoan 'horns of consecration' (right).

At Stenness, the same type of horizon features occurs – a twin peak with central valley, but here found in the direction of the setting midwinter sun (Fig 172, left).

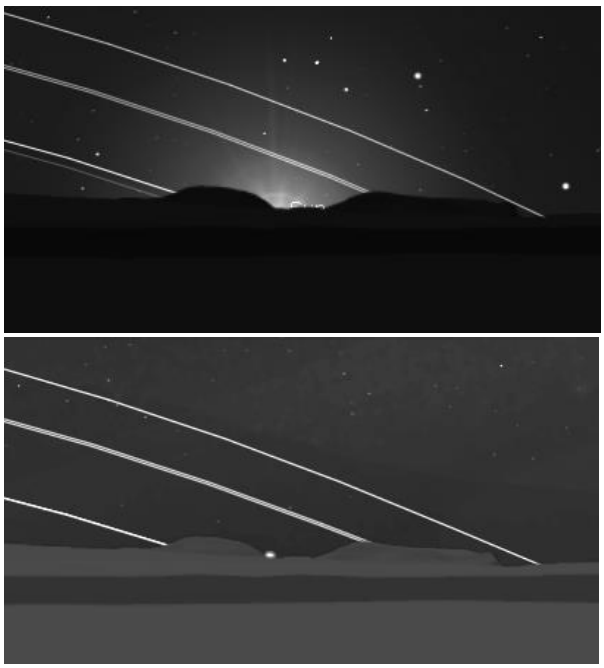


Figure 171. (left) the sun disappears fully behind the southernmost hill on Hoy at the midwinter sunset. (Right) Sirius setting between the twin hills of Hoy.

At Bryn Celli Ddu, if, as suggested above, midwinter sunrises were observed from the stone outcrop before the passage grave was built, at c. 3500 BC Sirius would have shared the same declination. Such a skyscape/landscape alignment may have given the outcrop a sacred significance that attracted the building of the later tomb. The proximity to the Braint is also notable – its etymology is the same as the Celtic Brigantia, a goddess name meaning 'the high one'. This suggests the river was linked to a female divinity; on one hand its position echoes the Menai Straits beyond, but we have also argued how such rivers were equivalents of the Milky Way.

If the builders of the monument utilised the Snowdonia landscape for sight-lines, as suggested by the midwinter sunrise alignment, it is worth investigating whether other peaks or troughs in the mountains might have been similarly utilised. The first suggested alignment is the rising of Gacrux from out of Moel Eilio (Fig 173), the next peak to the right of the twin peaks that enclose the Llanberis pass and from which the midwinter sun rose; δ and β Crucis rise shortly after Gacrux but from out of the next peak along, Mynydd Mawr; when Crux is at its highest point (straddling Mynydd Carn Goch) Hadar can be seen rising from Mynydd Mawr.

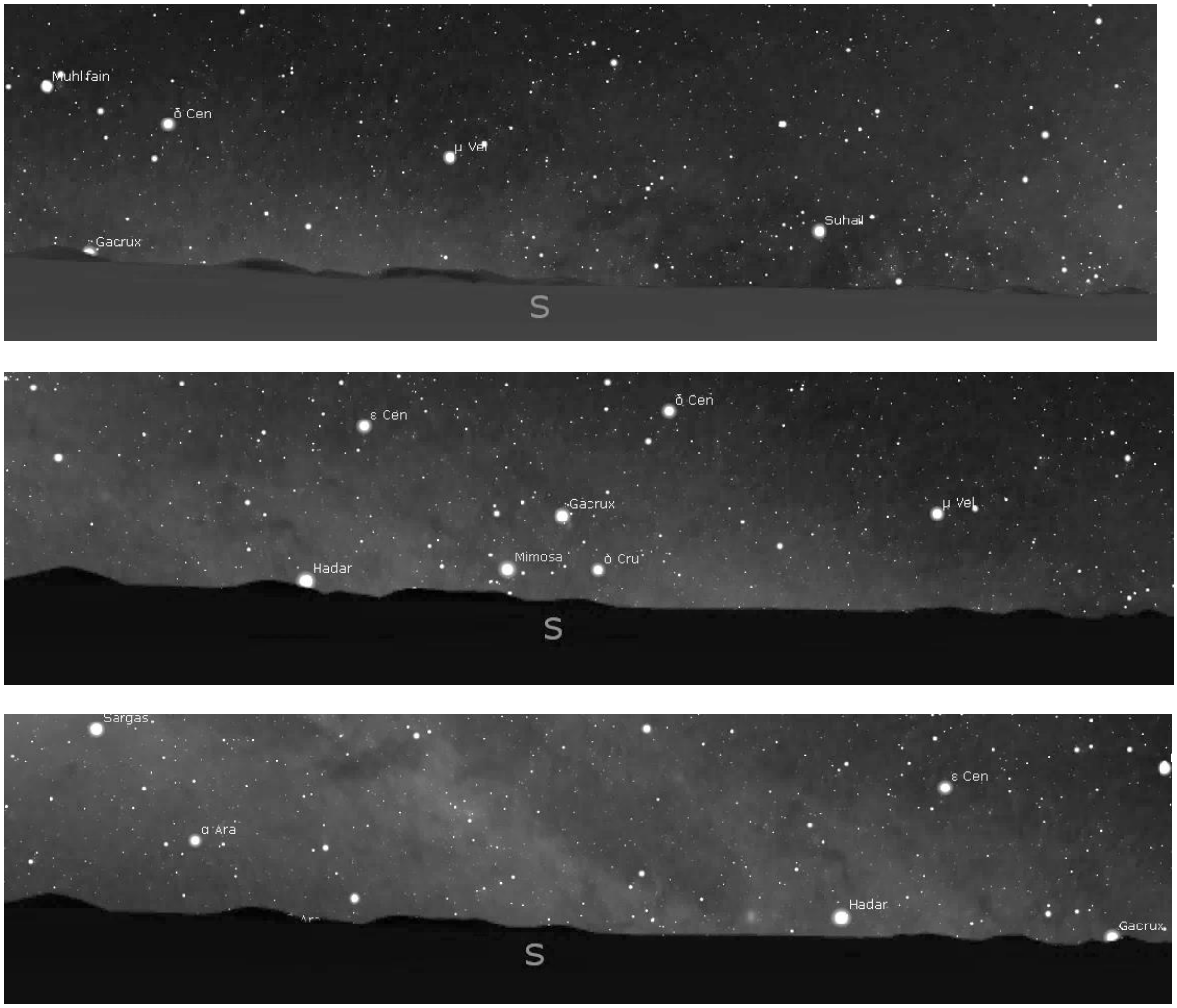


Figure 172. Gacrux rising from Moel Eilio (top), and setting over the Llŷn peninsula (bottom) c.3000 BC

As Hadar rises and Crux straddles the sky, the Milky Way would have stood brilliantly behind the Snowdonia massif, running the same course above as the river Braint did below (Fig 174). The coincidence of heavenly and earthly rivers running parallel above and below, and the rising of the prominent Milky Way stars of Crux from behind the major peaks of Snowdonia (a facet they shared with the midwinter sun) suggests the locale was thought of as special.

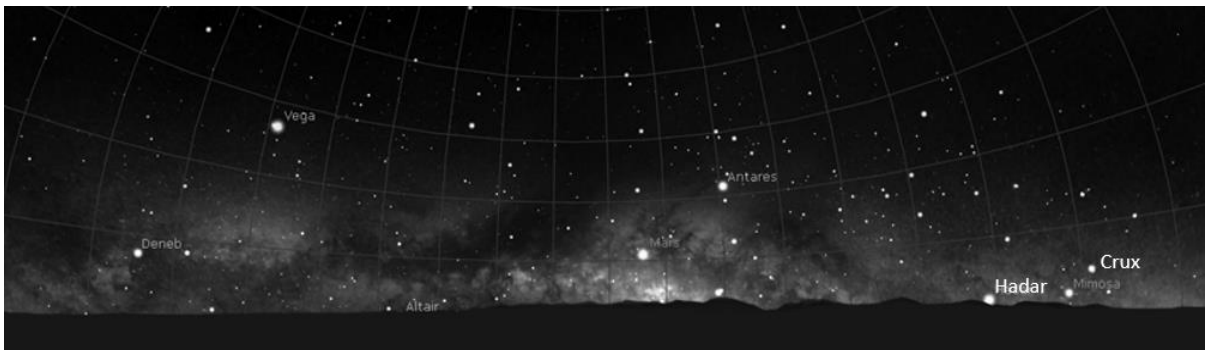


Figure 173. The Milky Way rising behind Snowdonia as Hadar rises c.3000 BC.

In summary, an observer standing at the site of Bryn Celli Ddu at midwinter looking towards the SE quadrant of the sky would witness the bright stars of Crux and Hadar, embedded in the Milky Way, rising from the prominent peaks on the horizon, and watch as they set over the three smaller peaks on the Llŷn. This would be followed by the rising of the sun out of the Llanberis pass (Fig 175).

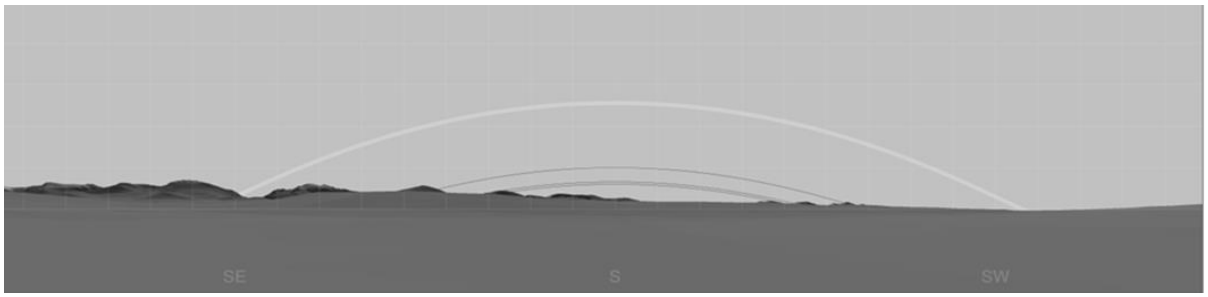


Figure 174. Rising and setting points of the midwinter sun (light arc) and stars of Crux (darker arc).

The midwinter alignment that exists between the Bryn Celli Ddu locale and the Llanberis Pass is also referenced in the layout of the proposed henge. Although the later passage grave entrance orients on the midsummer sunrise, the freestanding pillar stone within the chamber (coloured red in Fig 176) lies out of sight of the passage and therefore out of the line of the sun's rays at midsummer; interestingly, in relation to the central feature of the monument (a central pit) this pillar stone lies on the midwinter sunset axis (Fig 176, right) – suggesting these features belonged to the henge before they were 'swallowed up' by the later passage grave mound.

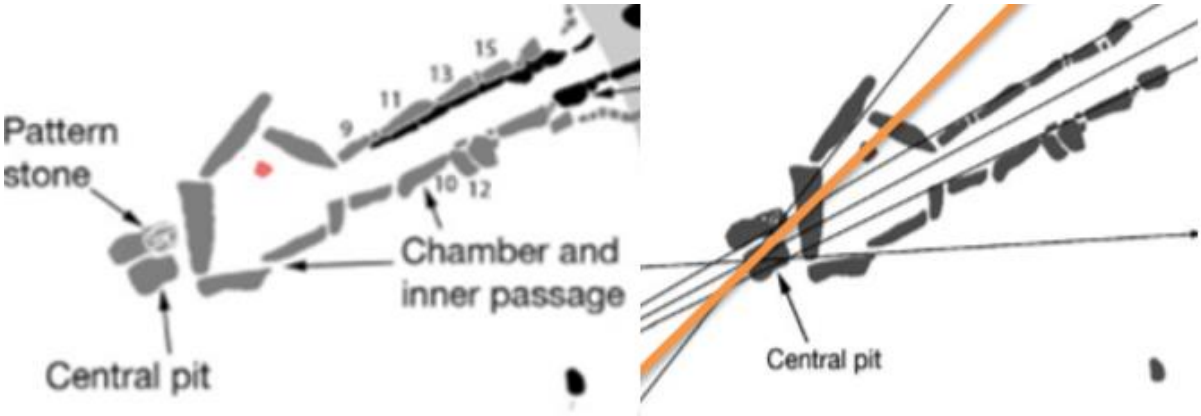


Figure 175. The position of the internal pillar stone (marked red on the left diagram) is aligned on the rising and setting points of the sun at midsummer and midwinter respectively (right diagram) in relation to the central pit (after Burrows 2010)

The fact that the later midsummer alignment necessitated the building of a passage, as no landscape features existed in that region of the horizon, suggests that the primary placement of the site was initially based on the midwinter sunrise phenomenon, and that as at Stonehenge, the later midsummer sunrise orientation may represent a change-over of traditions by late-coming peoples.

If the passage grave was secondary, then there are features of the earlier henge and stone circle that are of interest. There are three large stones (A, B and C) that seem to be incongruous to the rest of the circle (Fig 177).

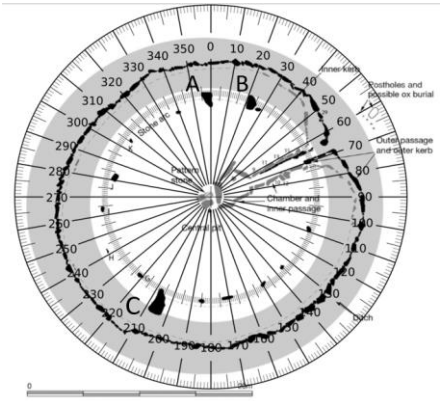


Figure 176. The positions of stones A, B and C at Bryn Celli Ddu and their orientation (after Burrows 2010).

Stone A seems to be set with its long side at due north, Stone B is set at 20-25° from north, and the Stone C is oriented at c. 203°–209°. Over the latter, the largest free-standing stone at the site, if viewed from the centre of the monument, one would have seen the three peaks of the Llŷn peninsula (198°–208°) which were the setting point of stars in Crux in this era. The placement of this stone recalls the stone-holes present at Woodhenge and the SSW stone found at the Sanctuary, both aligned on Crux. This alignment can be extended north to Stone B, which points to the rising of Caph in Cassiopeia (Fig 178) followed by γ and δ Cassiopeia

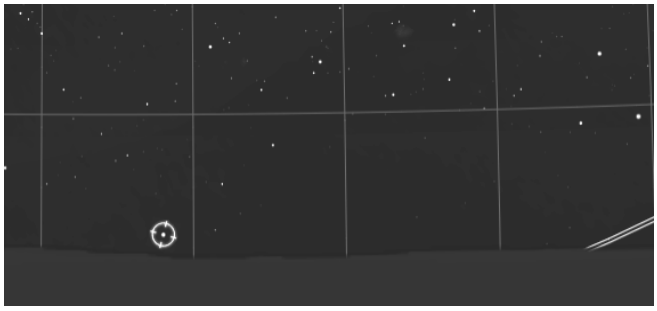


Figure 177. The rising of β Cassiopeia from Bryn Celli Ddu c.2700 BC.

There is a correlation in behaviour, as we have seen, between these two sets of stars that sit on opposite sides of the sky. Both are in the ring of the Milky Way (and therefore linked to the goddess and her body in Near Eastern/Neolithic myth) and, as we have seen, the rising of one and the setting of the other occurred simultaneously (linked to this is the fact that when Cassiopeia stopped setting as seen from Orkney, Crux stopped rising). Likewise, the setting of Gacrux occurs the moment Cassiopeia rises.

In Fig 179 we can see the opposition without landscape:

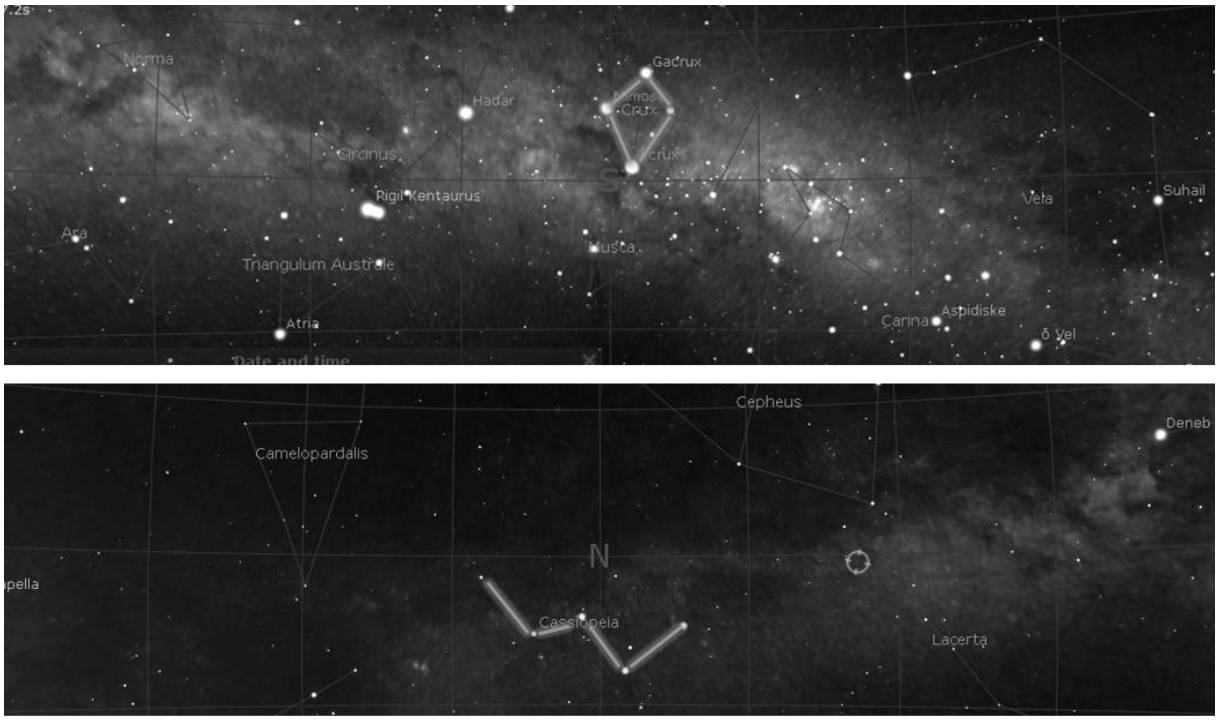


Figure 178. The 'balancing act' between Crux (top) and Cassiopeia (bottom)

Bryn Celli Ddu, then, provides us with large stones in the circle that from the centre of the monument align with the setting of Gacrux behind a prominent set of peaks and the rising of stars in Cassiopeia. The rising of the stars of Crux occur from a prominent peak in the Snowdonia range, as does the rising of the midwinter sun. Although the later passage provides a clear midsummer sunrise alignment (that lacks an external landscape analogue), and the placing of the pillar stone in relation to the central pit feature may suggest a midwinter sunset alignment was present within the earlier henge, as a compliment to the naturally occurring midwinter sunrise from the Llanberis pass that had perhaps prompted the site to be chosen in the first place (Fig 180).

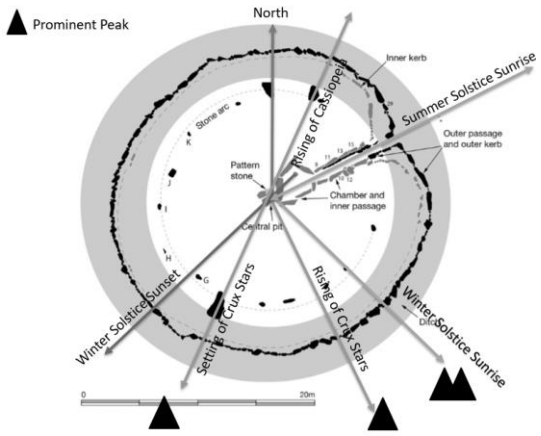


Figure 179. Alignments from Bryn Celli Ddu

Turning now to Barclodiad y Gawres (‘Apronful of the Giantess’), this site, another passage grave, lies on the west coast of Anglesey in a commanding position above the Irish Sea. Unlike Bryn Celli Ddu its passage, which leads in to a cruciform chamber, is not oriented on a solar event. Although the midsummer sun sets to the NW of the tomb behind Holyhead mountain (Fig 181). Its passage (Fig 182) has a heading of between c. 338–11° seemingly centred on a peak on the visible horizon at 352º (Fig 183).

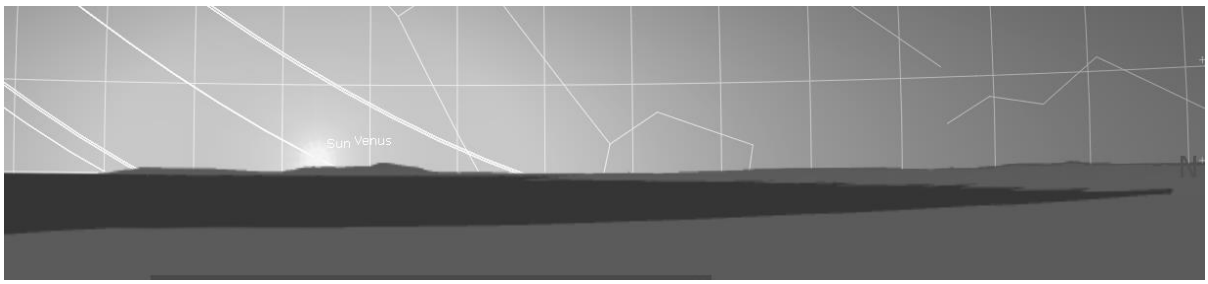


Figure 180. Setting of the midsummer sun over Holyhead Mountain as seen from Barclodiad y Gawres.

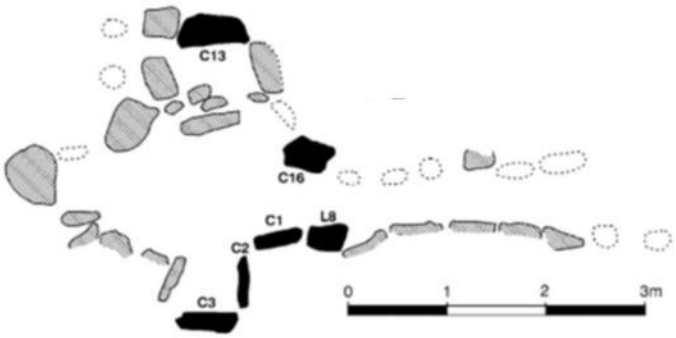


Figure 181. Plan of the chamber at Barclodiad y Gawres (after Shee-Twohig 1981)

Whether this phenomenon played a part in the choosing of this site is debateable. But the setting over a distant two-peaked mountain over water is somewhat suggestive of the view of the setting midwinter sun from the Stones of Stenness, or the rising from the same out of Llanberis pass at Bryn Celli Ddu. As in the case with both other sites, the coincidence of landform and sunrise/set is sufficiently obvious to the observer and needs no pinpointing on the ground (as is viewable over a wide area of the locale) and is not referenced in any monumental setting. As stated above, at Barclodiad y Gawres the passage does not align to any solar event (being aligned beyond the sun’s most northerly setting point) nor lunar, for the same reason.

If its orientation was stellar then we have a couple of possible ‘targets’ for c.2600 BC, both occurring within a 3-hour window; the first is Deneb in Cygnus, (Fig 183) which is the ‘tail’ of this cross-shaped constellation. Mann, amongst others, have argued for an orientation of other sites to the cygnus stars, and a possible reference to their cross-shaped pattern in the cruciform chambers of some Neolithic tombs. One example is Fourknocks, Co. Meath where the passage eschews solar alignments and instead is oriented between 20° and 30° (Fig 184). This

orientation offers a view of the Cooley mountains (Fig 187), in a pattern we have become familiar with – a set of peaks beside water. In 3000 BC these peaks marked the rising of Sadr in Cygnus.

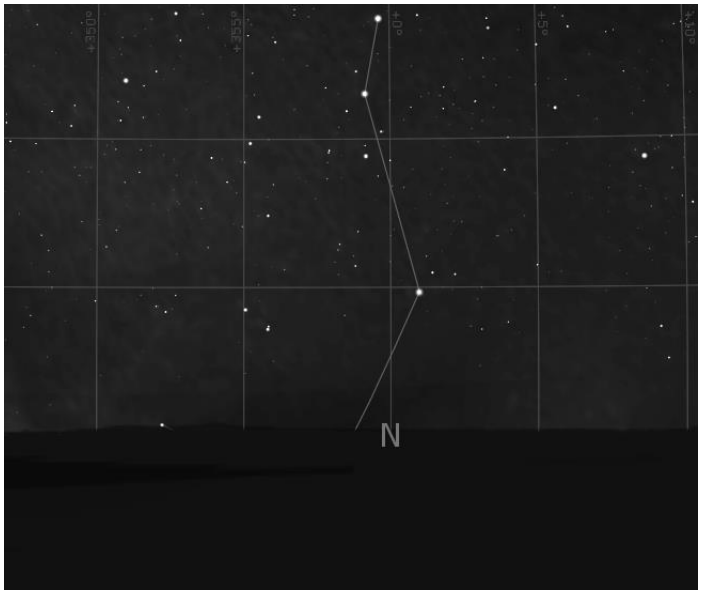


Figure 182. Deneb setting on the horizon as sighted along the passage alignment of Barclodiad y Gawres c.2600 BC.

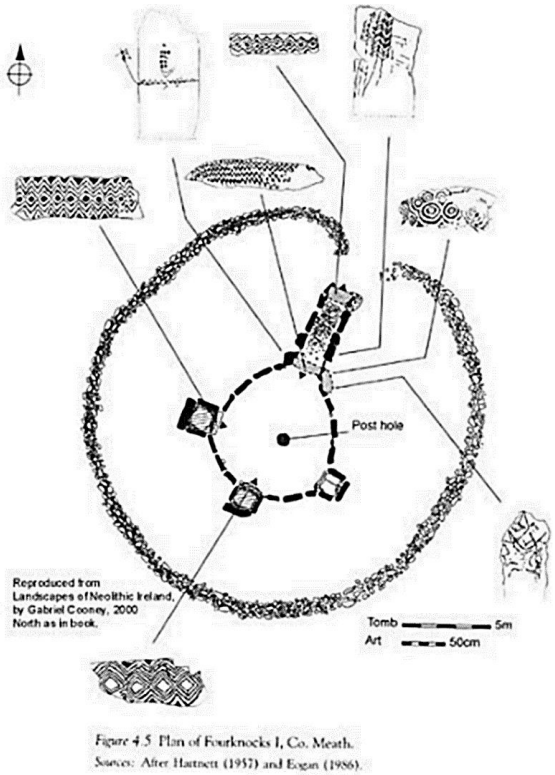


Figure 4.5 Plan of Fourknocks I, Co. Meath.
Sources: After Hartnett (1957) and Eogan (1986).

Figure 183. Fourknocks, Co. Meath (http://www.carrowkeel.com/sites/misc/fourknocks1.html)

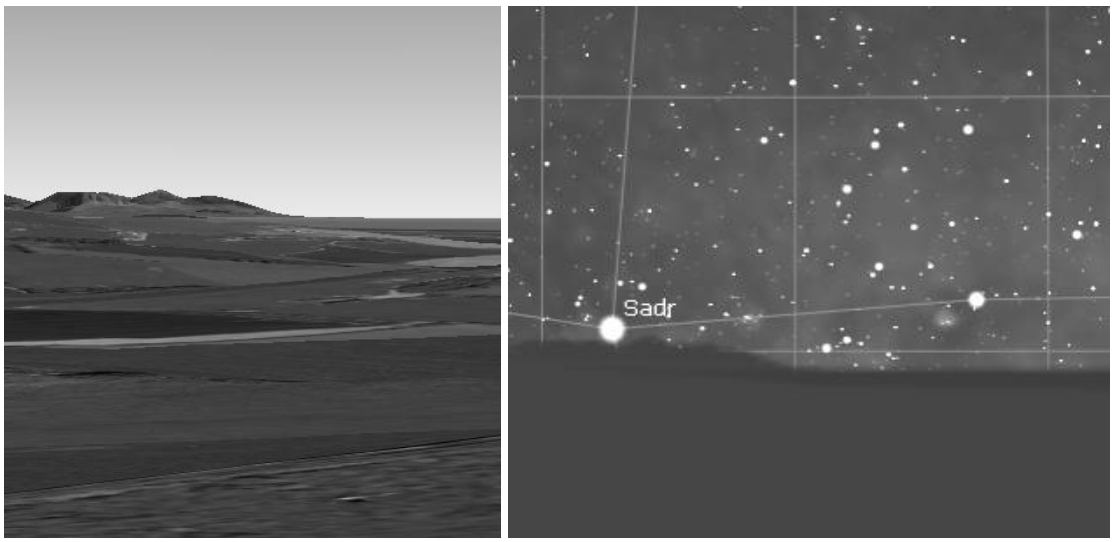


Figure 184. Rising of Sadr over the Cooley mountains as seen from the passage at Fourknocks c.3000 BC.

Yet there is a slightly later alignment to two stars in Cassiopeia: Caph, followed by Ruchbah (Fig 186). It is possible some importance was given to the rising of both stars in Cygnus and Cassiopeia; however, the reverse direction (i.e. that afforded by looking in to the passage) points towards 205°, and this is the setting point of Crux. Gacrux and Hadar would have been setting as Cassiopeia was rising in the NE (Fig 187).

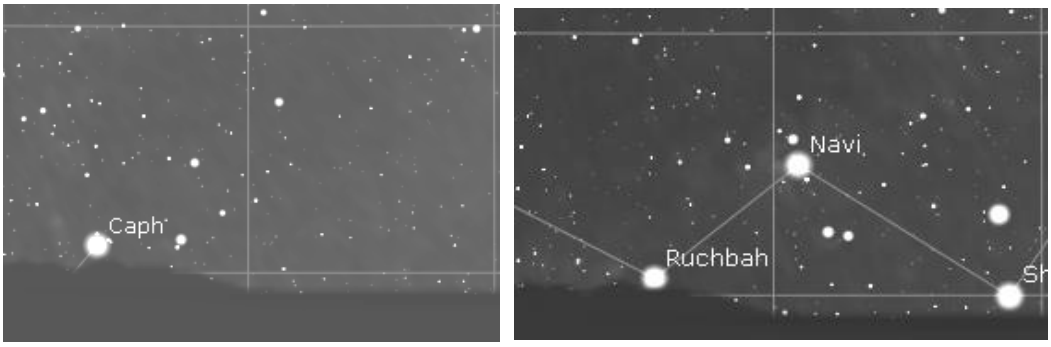


Figure 185. Rising of Caph (left) and Ruchbah over the Cooley Mountains as seen from the passage at Fourknocks c.3000 BC

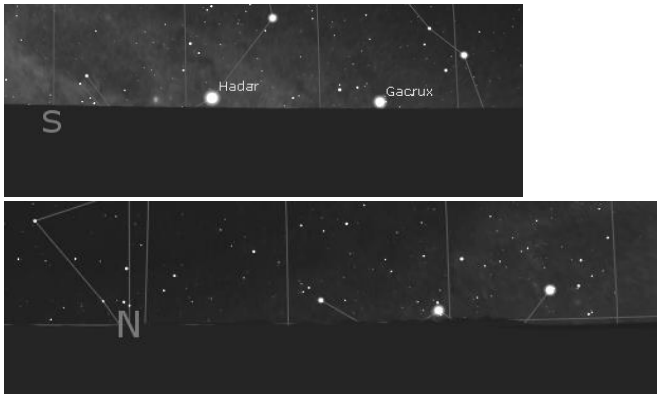


Figure 186. In the SW Gacrux and Hadar set along the passage alignment of Fourknocks as Cassiopeia rises over the Cooley Mountains to the NE c.3000 BC

At Bryn Celli Ddu the fact that there are stone settings towards the rising Cygnus/Cassiopeia region (like Fourknocks) *and* in the opposing direction towards the setting of Crux over the peaks of the Llŷn (stone C) suggests the emphasis might be on the balancing act between Cassiopeia and Crux, noted above. This does not mean the rising/setting of stars in Cygnus was redundant in the picture, only that the rising/setting of Caph was the prime target of the alignment, and its relation to Crux. At Fourknocks the back stone of the chamber (Fig 188, left) was decorated with lozenges, which may have some reference to the alignment of that stone to the lozenge of Crux. Other stones show the zig-zag motif that is reminiscent of the 'W' of Cassiopeia – especially the lintel that marks the start of the outward passage from the chamber facing towards the Cooley mountains (Fig 188, right), as if each stone was suggestive of the constellation that rose/set behind it.

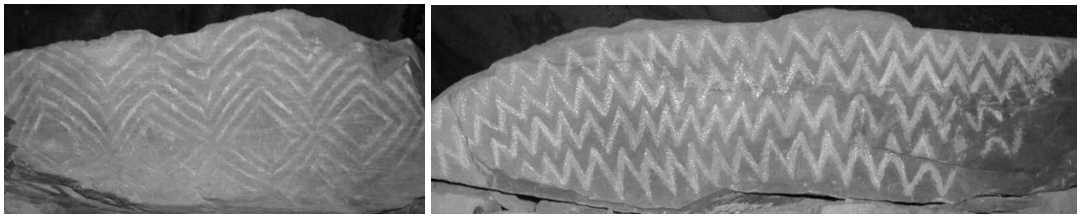


Figure 187. The lozenge marked stone (left) and zig-zag lintel stone (right) from Fourknocks.

Returning to Barclodiad y Gawres, we note that 3 hours after Deneb sets Navi is viewable from the passage grazing the top of the peak at 352° (Fig 189) on which the passage seems to be aligned.

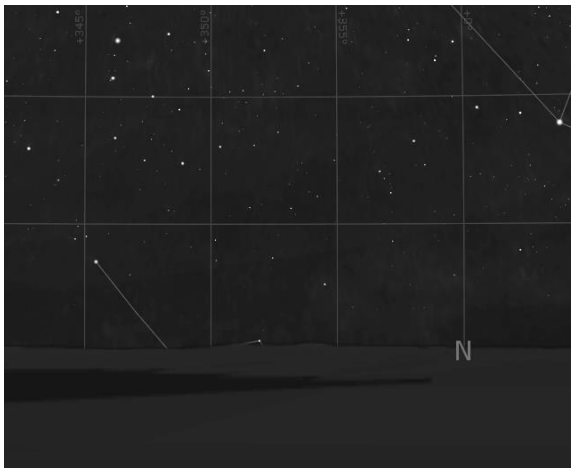


Figure 188. Navi brushing the northerly peak that arguably defines the passage alignment of Barclodiad y Gawres c.2600 BC

Unlike the setting of Deneb, the passage of Navi along the horizon is accompanied by several other significant stellar occurrences: Sirius and Betelgeuse lie on the horizon poised to set in to the sea as Gacrux in Crux rises; an hour later, as Navi reachs the mountain peak on which the passage is aligned Mimosa in Crux rises in the exact opposite side of the sky (170° - the alignment of the chamber looking in, and the direction of the peak of Yr Eifl) (Fig 190); The

whole ‘drama’ would have been clearly visible from the coastal position afforded by the siting of the tomb. An alignment on Deneb alone seems a less likely scenario than one which referenced the ‘vulva’ and ‘breasts’ of the Milky Way see-sawing on the horizon following Orion and Sirius disappearing below the waves.

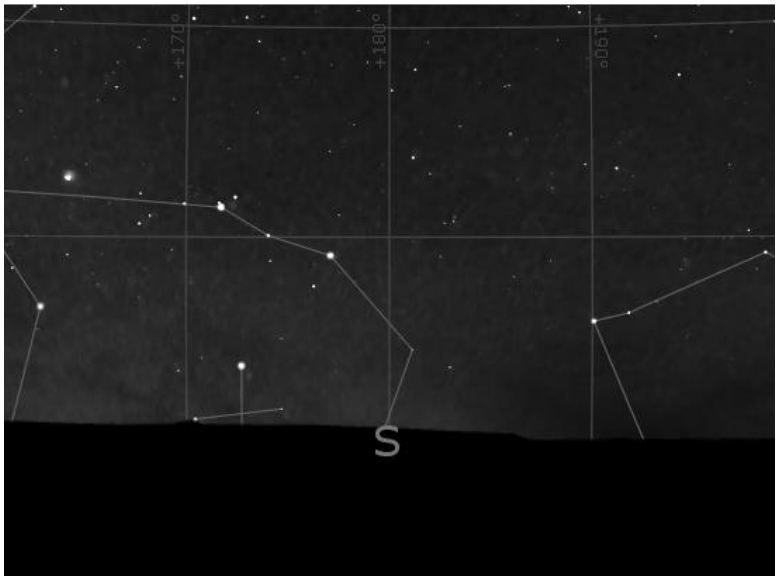


Figure 189. As seen from Barclodiad y Gawres, when Navi grazed the horizon to the north Mimosa in Crux is just rising to the south over the peak of Yr Eifl c.2600 BC

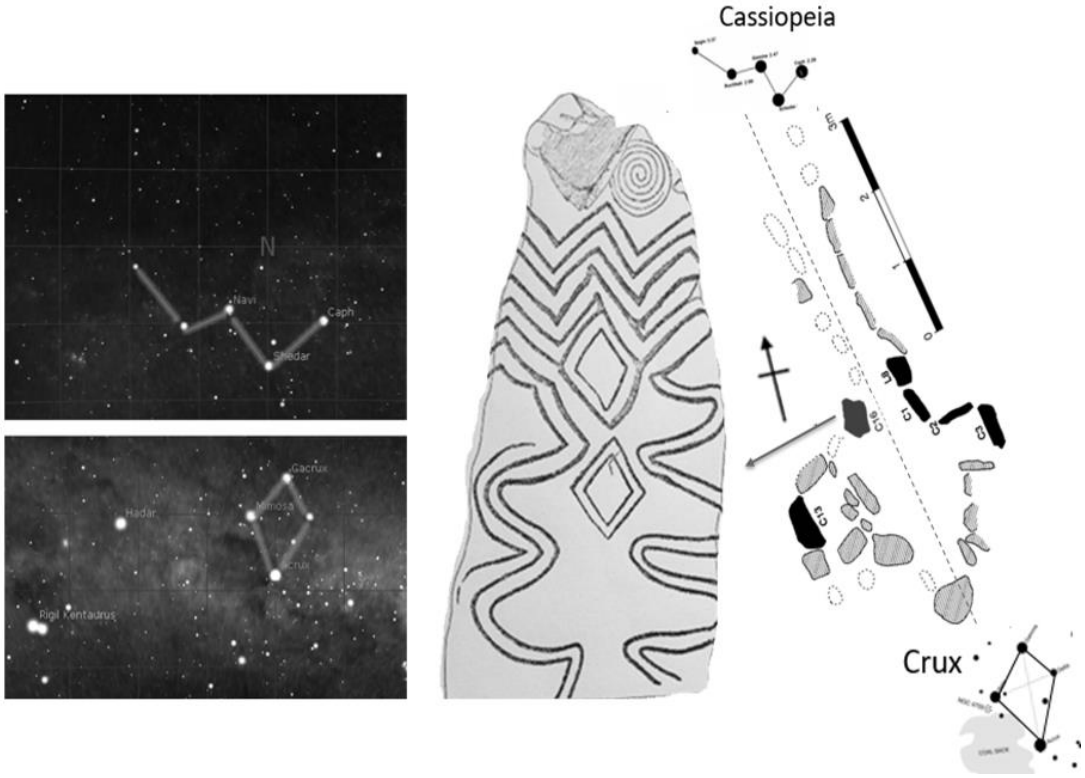


Figure 190. The alignment of the chamber of Barclodiad y Gawres to Crux and Cassiopeia seems to be mirrored on the imagery depicted on stone 22

Figure 191. Close up laser scan of lozenge and 'bucrania/brow/breasts' symbol from the Folkton drums (image source: Jones, A et al *2015) which has similarities to the Barclodiad Y Gawres image in Fig 191, above*

If the alignment at Barclodiad y Gawres was on the counter-balance of the stars of Crux and Cassiopeia in the Milky Way rather than Sadr we may see a reflection of this same stellar symbolism in the petroglyphs found in the chamber. Stone 22 (C16) which lines the passage has clear 'W' shaped markings over two lozenges (Fig 191). The same connection between lozenge and zig-zag is seen on the Fourknocks stones as mentioned above, as well as the Folkton Drums (Fig 192). There may originally have been another spiral at the top of the Barclodiad y Gawres stone suggesting we are looking at an anthropomorphic figure such as are found in other burial monuments (Fig 193).

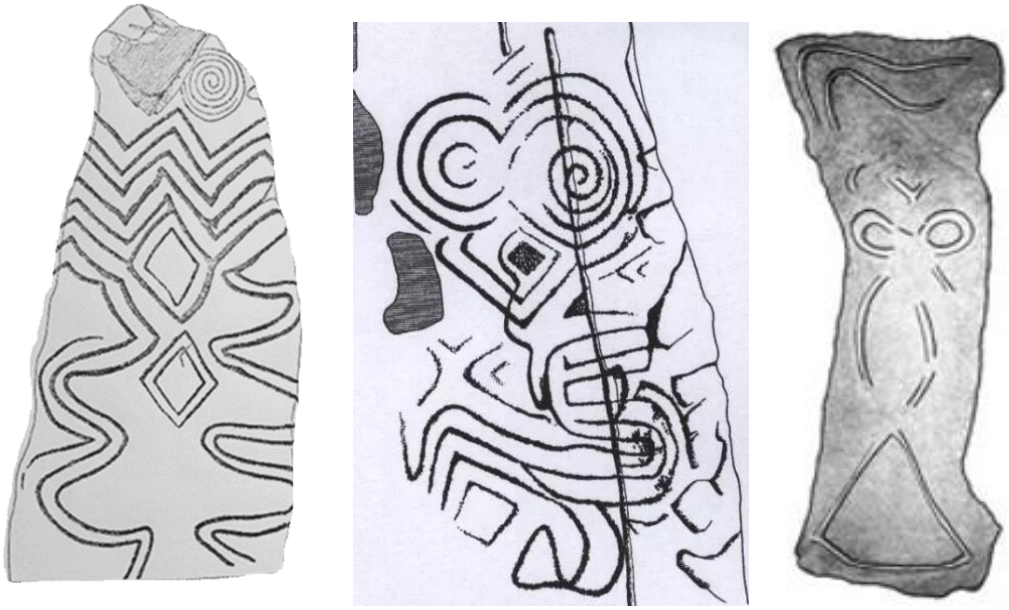


Figure 192. Anthropomorphic carved stones from Barclodiad y Gawres, and from the top of the patterned stone at Bryn Celli Ddu

If the top part, now fractured, mirrored the right side, as the rest of the stone mirrors the other, we would have an anthropomorphic figure broadly like the Iberian schist figures (Fig 194):

Figure 193. Suggested reconstruction of the Barclodiad y Gawres petroglyph in comparison with Iberian schist plaque

Yet even if the spiral is singular, it still may represent an eye, perhaps representing a figure akin to Bóand or the Egyptian cow-goddesses, whose singular solar 'eye' is arguably referenced in the Ludwigshafen Seehalde wall paintings with their solar 'heads'. That the 'W' and lozenge carved on the image echo its placement in a passage-way aligned on similarly-shaped stars in the Milky Way suggest that in such figures we have a depiction of the Milky Way Goddess, whose appearance within such monuments advocates a funerary aspect to her character, a facet also belonging to the cattle goddesses in Egypt.

Having examined the possible Cassiopeia alignment at Barclodiad y Gawres, the counter alignment to the SSE can now be examined in detail. The diagram below (Fig 195) shows the rising and settings of the midwinter sun (lighter arc) and the stars of Crux (darker arcs) as seen from the site of the monument.

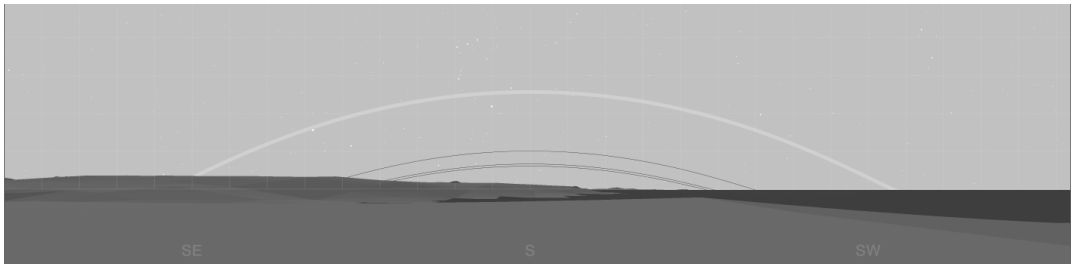


Figure 194. Midwinter sunrise and sunset arc (light arc) as seen from Barclodiad y Gawres, plus the main stars of Crux (darker arcs).

Unlike at Bryn Celli the peaks from which these stars could rise are not as prominent, however Gacrux rises from the point where the land begins to slope down to the sea (left arrow, Fig 196) and Mimosa from over Yr Eifl (right arrow, Fig 196).

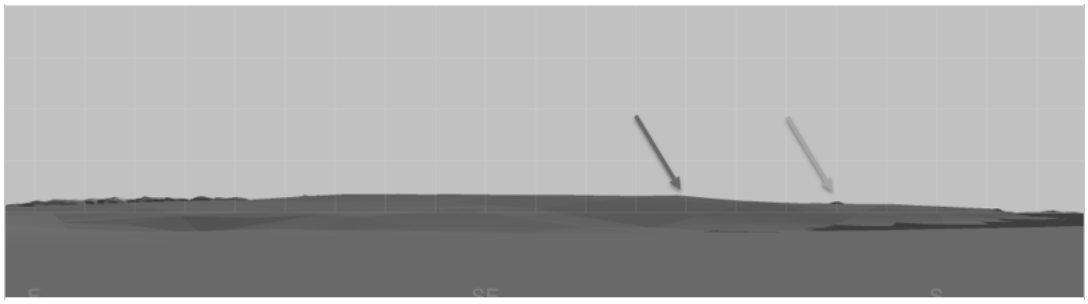


Figure 195. The two most prominent landscape features SE of Barclodiad y Gawres

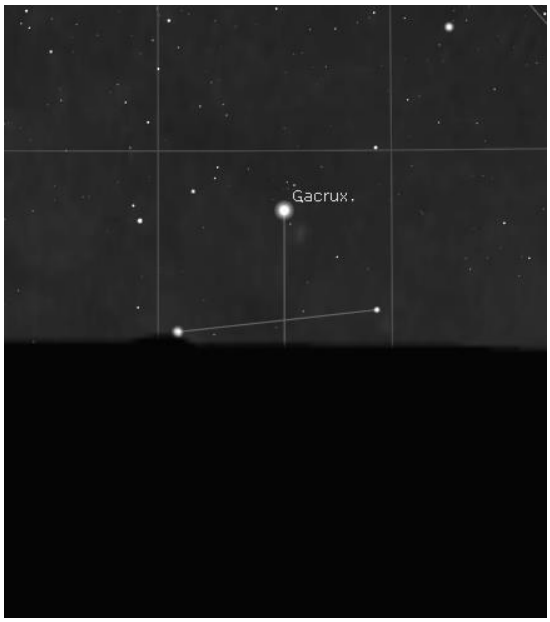


Figure 196. *The rising of Mimosa seen from Barclodiad y Gawres over Yr Eifl c.2600 BC*

Yr Eifl on the Llŷn (right arrow, Fig 196) over which Mimosa rises is the same peak behind which Crux was seen to set from Bryn Celli Ddu, and is on the axis of the tomb chamber; due to precession Mimosa is the lowest star in Crux viewable from this location at this time; interestingly in 3600 BC the same peak would have marked the very bottom star of Crux, Acrux, that precession had made obsolete a millennium later. The passage grave was not built at that time, but the effect may still have been noted. It is noteworthy, then, that the main horizon feature looking south from Barclodiad just happens to have a Crux alignment.

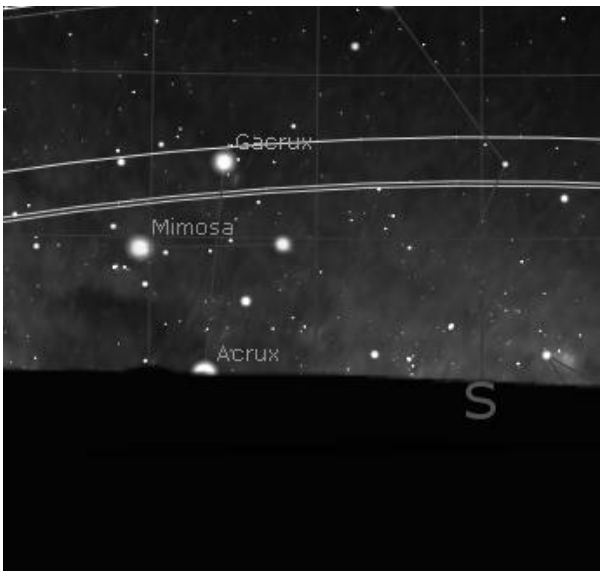


Figure 197.c. 3600 BC Acrux would have risen from the same spot as Mimosa did at the time of the building of Barclodiad y Gawres.

The setting of Crux is also of interest as Gacrux sets in the sea just beyond the last peak of the Llŷn peninsula (Fig 200). This accords to the pattern noted elsewhere of risings/settings using peaks near water as landmarks.

Figure 198. The setting of Gacrux in the sea beyond the last peak visible on the Llŷn peninsula.

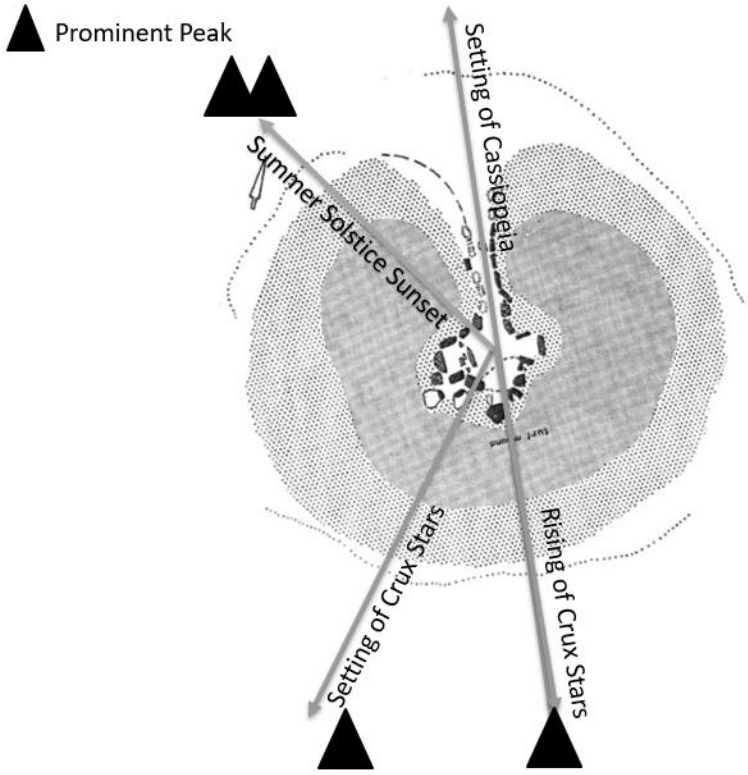


Figure 199. Summary of alignments, natural and mad-made, from Barclodiad y Gawres.

Brief Conclusion

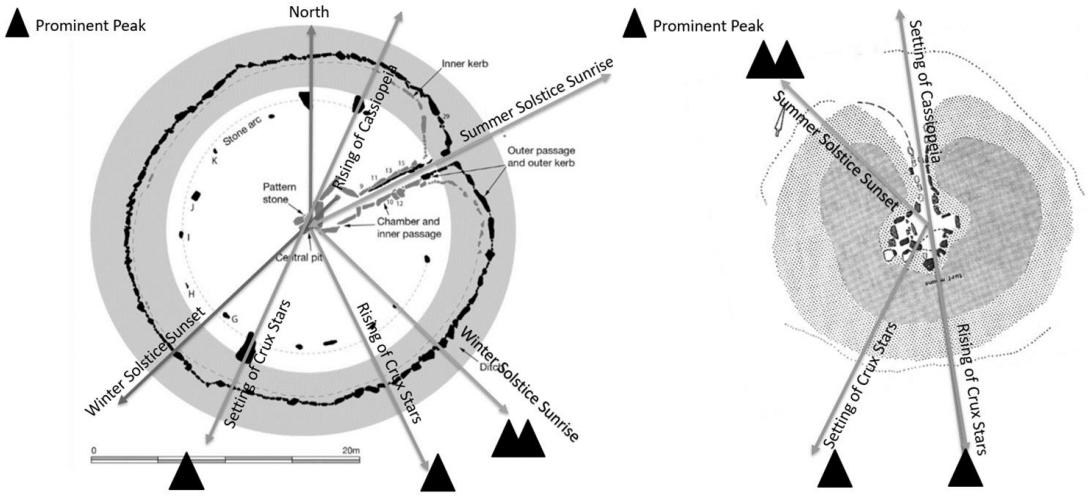


Figure 200. Alignments from Bryn Celli Ddu (left) and Barclodiad y Gawres (right)

Both Bryn Celli Ddu and Barclodiad y Gawres include the use of prominent landscape features as rising and setting points for the same star groups (Fig 202); both have solsticial alignments on such peaks and both have internal settings (free-standing stones and passage respectively) that show an alignment on the horizon at the points where the rising/setting of Crux and

Cassiopeia can be seen – something that might be reflected in the symbolism of the petroglyphs found in the tombs. The alignment between natural features and stellar/solar events was arguably the impetus that led to the construction of these ritual sites in these specific locations.

What hasn't been touched on here is the symbolism of an 'ox' skeleton found outside the entrance of Bryn Celli Ddu; in the following chapter we will leave stellar alignments behind and examine cattle remains and symbolism in the sites and ask whether these, like the posited alignments, in any way correspond to the 'shaping mythology' reconstructed in part one.

Chapter Six: The Cow Mother

6.1 Horns, wombs and tombs

A major component of the divine female imagery in the Ancient Near East and in the mythology of Near Eastern derived traditions (such as P-IE as postulated in Part One) is a bovine aspect; the importance and wide distribution of the cattle-raiding myth in P-IE traditions, which originated as a seasonal repetition of the cosmogony, suggests the high value, symbolic and otherwise, of this animal. In the following section the evidence for cattle use and veneration at the ritual sites of the Neolithic (beginning with an examination of Long Barrows) is studied in overview, showing that the appearance of cattle in such contexts is not limited to feasting scenarios but suggests a symbolic, arguably numinous, quality that matches the mythological and religious traditions discussed in part one. DNA evidence suggests that the cattle found in domestic contexts in Britain and Ireland during the Neolithic were of imported stock, ultimately derived from domestication of wild aurochsen in Anatolia (Arbuckle & Makarewicz 2009; Beja-Pereira *et al* 2006; Bollongino *et al*., 2006; Bollongino & Burger 2007). There is little evidence for domestication of wild cattle *in situ* (Bollongino *et al*. 2008; Edwards *et al* 2007). This Near Eastern origin is of interest if the introduction of these animals was accompanied by a cult of similar provenance. One would expect the importation of a Near Eastern derived species to bring with it some amount of cultural baggage or tradition of similar pedigree.

6.11 The Predominance, and type, of Cattle bones

The primary importance of cattle remains in Neolithic ritual deposits is something that has been made clear through excavation. In a recent study of faunal remains from the Neolithic and Early Bronze Age, focussing on sites in southern Britain (Serjeantson 2011) the highest proportion of any animal bones found in ritual contexts are cattle bones – usually between 50% and 70% (70% in Long Barrows) of all faunal remains, only dropping lower than pig in the late Neolithic (coinciding with the emergence of circular ritual enclosures), but after which time, during the late Neolithic/Early Bronze age transition, rising again to c.60–95% in sites associated with Beaker assemblages (Serjeantson; 2011, pp.15-17). Arguably, if cattle were the preferred animals involved in ritual and pigs were the main foodstuffs consumed by those attending such rites, we would expect to see a rise in the ratio of pig bones associated with feasting during the late Neolithic where larger structures (especially the ‘super-henges’) could accommodate larger

numbers of ‘participants’ than in previous eras. Maltby (2017) has noted that the interpretation of British Neolithic faunal assemblages is made more challenging by the fact that ‘the largest assemblages, whether from causewayed enclosures such as Hambledon Hill and Windmill Hill, Wiltshire… or from later Neolithic henge enclosures such as Mount Pleasant, Dorset… and Durrington Walls, Wiltshire, are from sites that were often used for large-scale gatherings.’. The decreasing ratio of cattle to pig bones during the late Neolithic may, then, simply be an artefact of increased ‘visitor numbers’ and may bear no reflection on changes in the importance of the animal in ritual. A recent study by Craig *et al* (2015) showed that there was a distinction between food remnants on pottery used in ceremonial and non-ceremonial (domestic) contexts – the latter showed more evidence for meat eating (pig) while pottery used in ceremonial locations (at the entrance of the Southern Circle at Durrington, for instance) showed evidence of dairy consumption, or at least the presence of dairy products – though whether for consumption or for offerings is not known, though the larger shard size of dairy-containing pots is suggestive of deposition rather than simply being discarded, as argued for the domestic areas of the site (*ibid*, p.1107). Analysis of grooved ware assemblages from Wyke Down 1 on Cranborne Chase by Legge showed a similar dominance in cow consumption (Legge 1991). The cow was still the ritual animal of choice, despite the general (profane) taste for pork – at least at large gatherings, where, as Maltby notes (1990) food consumption ‘may have been very different from the normal dietary pattern.’.

In the middle Neolithic, Serjeantson points out, we begin to see a marked difference in the placement of bone types – those of cattle being ‘specially placed’ rather than deposited as casual ‘food remains’ (*ibid*, p.15). This suggests the remains of cattle occupy a different ritual ‘niche’ than feasting – and that the dominance of cattle bones throughout most of the Neolithic probably had little to do with what the populations were eating at the time and more to do with the importance of the cow in the rituals/mythology – something to be expected if cattle-rich P-IE derived myths were the ‘shaping myths’ of that period.

Attempts to assess the age, sex and ‘use’ of cattle is hampered in many cases by the poor state of preservation of bone – but in the main it seems that although evidence for castration (for use as traction animals) cannot be proven, it is probable (some animals do show the expected stature of oxen), and that the death of some calves in extreme youth, as well as the large female-to-male ratio of remains, suggests cattle were bred for milk as well as meat, as evidence from Hambledon Hill and Windmill Hill suggests (Legge 1981; Grigson 1981; 1982; 1989). This dairying economy is something seconded by the remains of milk proteins and lipids found in pottery vessels (Copley *et al* 2005), especially, as stated above, in ritual contexts (Craig *et al*

2015). Milking seems to have been important in the early–mid Neolithic especially, with breeding for meat increasing in the late Neolithic.

It is generally assumed that the ratio of males to females found in Neolithic contexts is indicative of the numbers in the surrounding population – hence if cows outnumbered bulls it would suggest the use of cows as dairy animals (as 'surplus' male calves would be killed off early on). Indeed, the remains of cattle found on most sites are indicative of the age ranges expected in milk-production - the most likely finds are those of young male calves (killed to decrease the numbers of unruly, unproductive milk-wise, males in the herd) and those of old cows past calf-baring, and thus milk-producing, age (the average is 6 years of age, out of an expected lifespan of around 8 years). This, however, is the average taken from all types of site, domestic and ritual; when we look at specifics, however, we find that separate phases of certain ritual monuments go against this pattern, suggesting deposition patterns unconnected with food production. In phase one of Stonehenge (c 3100 BC) male and female cattle remains appear in equal numbers, suggesting a symbolic pairing rather than a representative slice of a female-heavy milking herd; similarly, at Newgrange we find an equal number of 3–4-year-old animals (Mount 1994, p.441). This is not feasting on the old and the superfluous members of the herd; we are looking at a symbolic 'offering' of the strongest, most useful members, in a ratio unrepresentative of the larger herd.

Above age and sex, it is the type of cattle bones found which is of interest to the general theme of this thesis. The appearance of cattle skulls, jaws and horns in the faunal record is much greater than the skulls of any other creature (save the aurochsen, which may have played a similar symbolic role to the cow) even where the number of other individuals (such as pigs in the late Neolithic) exceeds that of cattle. The frequent appearance of cattle skulls suggests this object was seen worthy of special treatment, perhaps even veneration. This tallies with the dominance of the motif in Prehistoric Near Eastern and Mediterranean cultures, as well as its appearance on Neolithic pottery and mausoleums throughout Europe as will be explored later (see below). It forms part of a symbolic 'language' of Old Europe. It is probably unnecessary to point out that horns do not necessarily have to belong to bulls, as female cattle can also have horns; the fact that a clear majority of cattle remains are female suggests we are not looking at images of male virility (or, rather, not that exclusively – if at all), but a wholly other range of symbols and attributes.

Our analysis will begin with an examination of the appearance of cattle remains in Neolithic Long Barrows, the communal burial monuments that preceded the henges, and what this may have symbolised, before looking at the later circular enclosures as possible continuations of the same ritual idea.

6.12 Cattle in Long Barrows

A cursory look at the appearance of cattle remains within Long Barrows reveals several interesting features that suggest their presence is indicative of more than simple feasting detritus. Although the placing of such remains within or on the Long Barrows may have put them at risk from later disturbance, possibly leaving us with a fraction of what once existed, we are lucky in that we have some records by early archaeologists such as Thurnham (1869) and Colt Hoare (1810) who took an interest in such objects in an era when many were digging in to such structures seeking more obvious 'treasure'. Because of their, and subsequent, excavations, a picture of a basic ritual pattern emerges from the data – much of which was analysed by Ashbee and placed in the appendix of his 'The Earthen Long Barrow in Britain' (1970, Appendix 9). Ashbee notes a number of instances of domestic and wild cattle appearing within the mounds of the Long Barrows, or in the ditches (*ibid*, pp.159–160) but we are more interested in what he terms 'remains with or about primary burials' (*ibid*, p.158), much of which have been recorded by Thurnham and Colt Hoare rather than modern excavation. While some records are more piece-meal than we would like (such as records of Fittleton 5 descried by Thurnham as 'scattered') others, especially when compared with examples mentioned by Serjeantson, begin to build a clear picture of ritual practice.

Beginning with placement of cattle remains within the mound we find preferences for the proximal end of the barrow as well as a focus on the main long axis, or 'spine' of the structure (the following sites are all referenced in Ashbee 1970, pp.158–9): Ashcott-Under-Wychwood contained skulls within the mound, one of which lay on the midline of barrow construction; and Beckhampton Road near Avebury, had three such midline skulls (one with attached vertebrae) (Fig 205). Fussell's lodge (see below) contained a skull at the proximal end at the midline axis. Heytesbury I contained the 'head and horns of seven or more oxen' (Colt Hoare 1810, quoted in Ashbee 1970, p.158), all at the proximal end (note, the identity of cattle as 'oxen', that is properly a neutered bull used as a draft-animal, is not easily gauged from skull remains, hence the use in this thesis of the more general term 'cattle'). The cattle skull found at Knook 2 by Colt Hoare, at the proximal end (which may have been an aurochsen skull given its size) was said to have been found 'immediately under the turf' (Colt Hoare 1810, quoted in Ashbee 1970, p.158). Many more such skulls lying 'immediately under the turf' may have been lost to the archaeological record through ploughing.

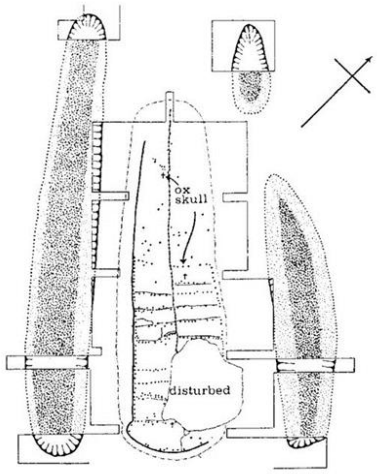


Figure 201. Beckhampton road long barrow with 'ox' skulls along the 'spine' of the monument (Ashbee et al 1979)

The number of skulls, where this can be ascertained, is of interest. There are several examples of single skulls, but also multiples, such as seen above at Beckhampton, where we find 3 (Fig 203) (or the unusual 7 at Heytesbury); 3 skulls also appear at Amesbury 42 at the eastern end of the Stonehenge cursus, which, like Beckhampton road was unaccompanied by human inhumation (some secondary inhumations were found at Amesbury 42). Thurnham noted how these skulls had been 'thrown on the incomplete funeral mound' having been 'cut from the carcasses' with the hooves still attached (Thurnham 1869, quoted in Ashbee 1970, p.158). This is a prime example of what are known as 'head and hooves' burials, which will be explored below. What is of interest is the appellation 'funeral mound' used by Thurnham – as no human remains were found either here or at Beckhampton. Likewise, Sherrington 1 Long Barrow contained a cattle skull but no inhumations. What, then, were these monuments for? And why the symbolism of 3 cattle skulls (with attached hides?) at sites at the end of linear features (cursus and avenue respectively at Beckhampton and Amesbury 42) near major ritual complexes?

While the archaeology alone offers us little in the way of clues as to why certain depositions may have taken place, mythology at least offers the opportunity of shedding some light on the matter. Triplicity is a feature found commonly in IE myth, as stated in part one (see 2.11). In the Lithuanian Aušrinė (dawn goddess) myth three cows are slain (through decapitation) in an act linked to the creation of the land and the release of the sun and the coming of spring:

"She cut off the heads of all three cows, who were her sisters. All the seas disappeared, turned to land. The earth sprang to life." (Greimas 1992, p.67); or the three (or sometimes seven) magical cows of Hindu tradition that produce soma, the 'milk of immortality' and the milky light of dawn, on their release from the cave of night; similarly, it is three cows who are rescued by Cúchulainn in *Aided ChonRoi* (see 2.4) – it is their own milk that is poured into the river by

Blathnat as a signal they can be rescued. Each of these instances preserves a key moment in P-IE myth where cattle, especially 3 cattle, had creative importance linked to seasonal cosmogonies. Might the multiple cattle skulls found at the ceremonial sites of the Neolithic pertain to rituals based on similar cosmogonic myths? The alignment of Beckhampton on the midwinter sunset further suggests such a ritual cosmogonic function, especially given the importance of the winter imprisonment and subsequent release of the cows from the 'Vala' cave/mountain (see part one) which is at root a solsticial event. Here orientation (winter solstice), species (cattle) and number (3) have mythological echoes that suggest the embodiment of a P-IE shaping mythology in Long Barrow design and ritual.

The appearance of cattle skulls in Long Barrows, then, is not necessarily associated with human burials or any kind of funerary feasting as such. Arguably, though, it may have been that the funerary function of Long Barrows involved a non-physical aspect of the dead person; that the bones of the dead in Neolithic society were not required to be deposited within them. The Long Barrow might have been a 'spirit house' or an area for post-mortem transformation, without the necessity of physical remains being present within them, or remaining within them, so that the distinction between 'empty/mock' and 'used/real' barrow is a modern archaeological distinction that might have been meaningless to a Stone Age man (though another interpretation is that such 'empty' monuments could have been cenotaphs). The appearance of cattle skulls in the mound, however, seems to be a pointer to a larger realm of mythological symbolism with cosmological overtones.

6.13 Heads and Hooves – the tomb as cow

Bovine symbolism is most obvious in what are termed 'Head and hooves' burials; these are burials accompanied by the skull of an animal found near the leg/feet bones and hooves, suggesting that both were still attached to the hide at the time of deposition. Thurnham records the cattle skulls of Amesbury 42 as being such like: 'They [the skulls] had evidently been cut from the carcasses with the hoofs and probably the integuments entire.' (Ashbee 1970, p.158).

As well as Amesbury 42 such burials are evidenced at Boles Barrow, which contains cattle skulls and a skull with associated feet, and Tower Hill Ashbury. Serjeant (after Ashbee) points out similar remains exist at Sherrington 1, Knook 2, Boles barrow, Corton and Tilshead (Ashbee 1966). However, the most well-known, thanks to its excellent excavation in 1957 by Ashbee, is that found at Fussell's lodge (Ashbee, 1966) (Fig 204).

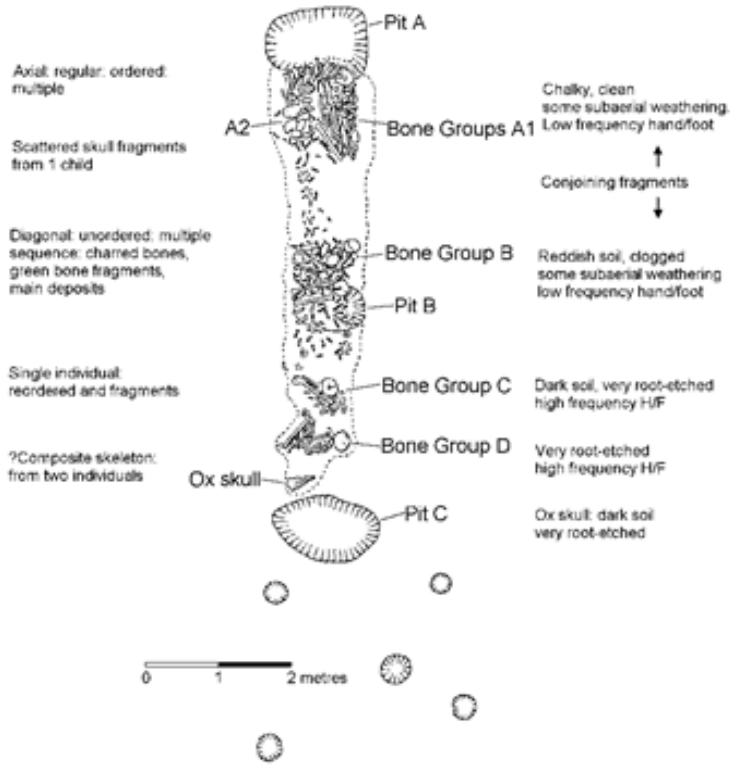


Figure 202. Plan of Fussell's lodge mortuary house (Wysocki et al 2007a)

Here, cattle foot bones were found on top (and 'upon the axis') of a flint cairn that had been placed over the burials (themselves located between the two large posts of a wooden mortuary enclosure). A cattle skull lay at the entrance of the enclosure, on the floor beside the first group of (female) burials at the entrance. Ashbee suggested the skull may have been fixed (externally) to the front post as the remains were piecemeal and fragmentary, suggesting it had been old and on display at the mercy of the elements (Serjeantson 2011, p.70). The survival of these often-fragile remains in the archaeological record is low –indeed it is often only the jaw-bones and teeth that remain of posited skulls. As such mortuary enclosures are usually tent-shaped structures with a central ridge – might the hide have been hung along the ridge, its feet hanging down either side, with the skull facing the front giving the impression of the dead being placed within the body of the animal?

The manner of deposition of cattle skulls in Long Barrows detailed above (proximal and axial), suggest quite strongly that they formed part of the *structure* of the monument rather than as a burial deposit within it (though in some cases like West Kennet we see cattle bones and human bones appearing in the chambers with no distinction between them). Such skulls with attached hides may thus have originally formed a kind of canopy over the deceased in the mortuary enclosure, before being re-used in the construction of the final barrow – or may simply have placed within the barrow without preceding burials – but expressing the same symbolism, that is creating a structure with (possibly overtly visible) bovine characteristics. One probable

exception is that of the Hemp Knoll Beaker burial where such head-and-hooves were interpreted as a ritual dress worn, perhaps, by a shaman or priest (Robertson-Mackay 1980, pp.123–176.). But equally it may originally have been placed on top of the body or coffin during the funeral rites and then placed by the side of the body afterwards. Some of the domestic cattle heads and foot bones found in an early Neolithic pit at Coneybury close to the site of the future henge, Maltby argues, 'were probably still attached to each other when originally deposited in the pit' (1990, p.58) suggesting a possible ritual pattern linked to the theme discussed above. That some of the bones from Coneybury, especially cattle foot bones, showed presence of gnawing by carnivores (*ibid*, p.59) suggests they hadn't been immediately buried, but may have been 'displayed'.

We are left with an image of a mortuary enclosure and Long Barrow (the latter which may contain the former, but not necessarily), in which a cattle skull, or skulls (sexing the skull is nigh on impossible) forms an obvious part of its design. Such skulls are usually seen in an elevated position, either at the front of the monument, or placed along its main axis.

This association between cattle skulls (henceforth 'bucrania') and burials in the ancient world is not restricted to the British Neolithic. At Çatalhöyük we see a very early appearance of bucrania (Fig 205) associated with nearby burials, something also found at Alacahöyük (Fig 206) where cattle-remains (skulls and foot bones) associated with graves suggest 'head and hooves' symbolism rather than the remains of funerary feasts (Zimmerman & Geniş 2011).

Figure 203. Bucrania at Çatalhöyük

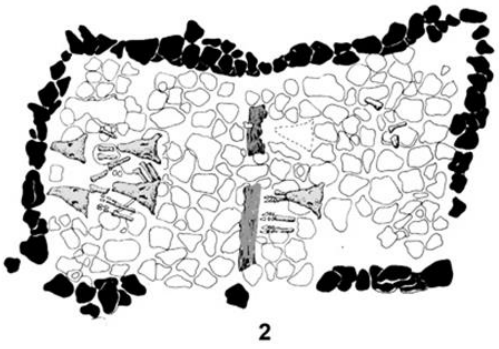


Figure 204. 'Head and hooves' burials at Alacahöyük (Zimmerman & Geniş 2011)

Closer to home, geographically and temporally, are the megalithic tombs of southern Europe and Brittany, where we also see images of bucrania (in this case carving of stylised cattle horns) in Neolithic tombs from Sardinia and appearing as bucrania-shaped 'necklaces' appearing on carved Breton menhirs which are often associated with megalithic tombs (Fig 207). Such carved bucrania may have taken the place of actual bones, or at least granting them more permanence.

Figure 205. Bucrania from Porto Torres - Su Crucifissu Mannu, Sardinia, and female form holding a presumed bucrania from Saint-Sernin-sur-Rance (Aveyron)

Looking east of Anatolia we find a possible cognate in the (arguably Tocharian speaking, and thus IE) Taklamakan populations, whose burial rites as revealed in the Xiaohe Tomb complex (Fig 208), consisted of cattle-hide tents or 'boats' (Fig 209) (Mair 2006, pp.273–318.) Large posts on each tomb reflected the sex of the occupant (males were buried under oar-shaped posts, females under phallic ones, as if to complement or balance the sex of the occupant) – and these were joined by an even larger post bearing a bucranium or pair of horns dyed with red ochre. The symbolism of the boat is suggestive of the solar-boats of Egypt and of Bronze Age Scandinavian carvings – it is an image of the tomb as a vehicle of transferring the soul to the heavens. Arguably, the mortuary houses of Neolithic Britain such as Fussell's Lodge are to be read in such terms – as a vehicle of the soul to an afterlife, or the locale of a transformative process.

The above discussion raises the possibility that the mortuary structures (mortuary enclosures and/or Long Barrows) of the fourth millennium BC might have been equated with the body of the cow; such imagery is apparent in Near Eastern tradition where Egyptian sarcophagi in the later dynastic periods were decorated with an image of the over-arching cow-goddess of the

Milky Way, Nut, on the inside of the lid of the coffin (Fig 210) an image that may have stemmed from an earlier conception of Nut as covering/protecting the dead Osiris, as detailed in the Pyramid texts (Faulkner 1969, p.141). It is an image in no wise different in symbolism than the ox-hide stretched over the bodies of the deceased in the mortuary house at Fussell's Lodge.

Figure 206. Xiaohe Tomb Complex. Figure 207. Ox-hide tents or 'boats') (http://www.china.org.cn/english/features/Archaeology/130815.htm)

In Egypt the form depicted is that of the celestial female in to whose cosmic womb the soul is to be reborn. What's more, the image of the goddess Nut as a cow with her four legs forming the cardinal points of the sky and the stars on her belly is suggestive of the cow-hide hanging over the wooden mortuary enclosures, such as at Fussell's Lodge, especially if the cow-skin had been selected because the patterns on its hide looked like the starry night sky. If so, and if the larger (final) barrow mound was surmounted by a skull and/or skin – might the bright chalk mound itself (or quartz facades/aprons of Newgrange and Bryn Celli Ddu) have also been representative of some celestial (namely, stellar) phenomenon? (This aspect will be discussed further in section 6.2).

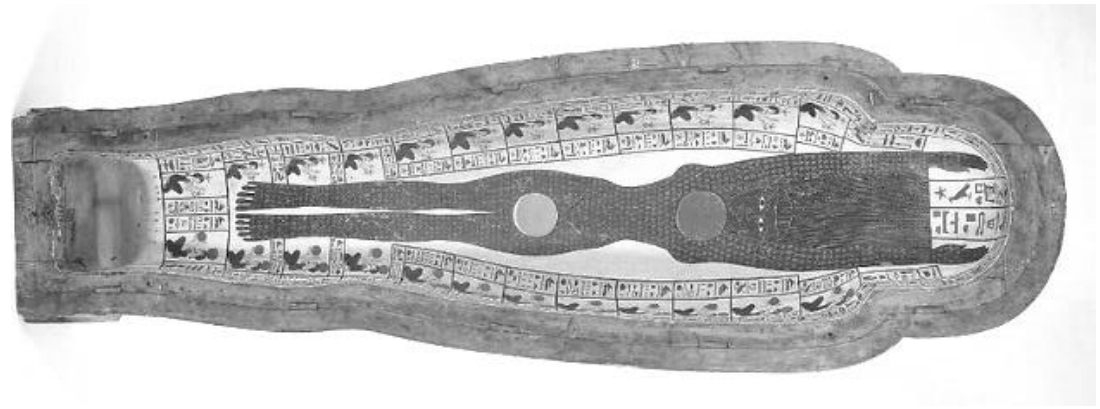


Figure 208. Nut portrayed on the inside lid of the sarcophagus Coffin of Peftjauneith, 26th Dynasty, showing a depiction of the Milky Way Goddess with solar symbol over her belly

Returning to Nut, the symbolism of the dead entering her body for rebirth mirrors the nocturnal journey of the sun, entering the mouth of the sky-goddess at sunset, and journeying through the mansions of the *Dwat* (the starry body of the goddess) through the hours of the night before being reborn from her womb at dawn. Entering the starry cosmic mother cow ultimately resulted in rebirth from her cosmic, stellar, womb, aping that of the sun at dawn. If in fourth millennium BC Britain and Ireland mortuary sites were symbolic of the body of the cow, as is suggested by the Irish name for Newgrange, Brú Na Bóinne, 'womb of the white cow', then the mortuary structures, like those of Egypt, might have been the location for post-mortem transformations within a divine bovine 'body'.

Jones has stated that there a 'clear homology between the architecture of the tomb and the anatomy of the human body', but also that the tombs, by their relation to the wider landscape, serve to inscribe the landscape as a body as well' (2002, p.347). The analogy between Neolithic tombs and the female form has often been made (the mound as 'pregnant' belly of Mother Earth has been a favourite of alternative archaeologists, for example), especially the narrow entrance between the 'legs'. But given the wealth of bovine symbolism might such an analogy be extended to a zoomorphic form? Despite there being some monuments whose form is very suggestive of an ox's hide, such as Camster, Caithness (Fig 213), on the face of it, the majority of tombs are not *explicitly* bovine in shape; but the fact remains their tapering form (from wide shoulder to more narrow rear) as well as the slope from higher proximal end to 'tail' end, is at least suggestive of a crouching animal, so that we merely need to place a bucranium at the front of such a mound to produce a form not unlike that of the Egyptian funerary cow Mehet Weret (Fig 212). There certainly seems to be some analogy between the folded legs of a lying bovine and the shape of some of the forecourts found in barrows, such as at Belas Knapp and West Kennet Long Barrow below (Figs 213 & 214), or more possibly an analogy between the forecourts and horns. These forecourts are often given the archaeological term 'horns' – and some of these forecourts, most often formed of timber settings, are extremely horn-like in shape; the modern term may be drawing on what was a deliberate design feature by the builders – to ape the horns of the cow and thus emphasise the boviform nature of the monument.

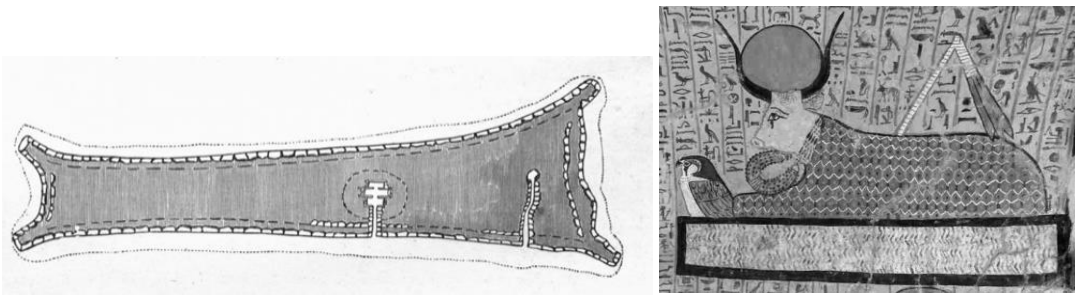


Figure 209. Camster Neolithic tomb, Caithness. Figure 210. Mehet Weret, Tomb of Irynefer, Deir el-Medina, 19th dynasty

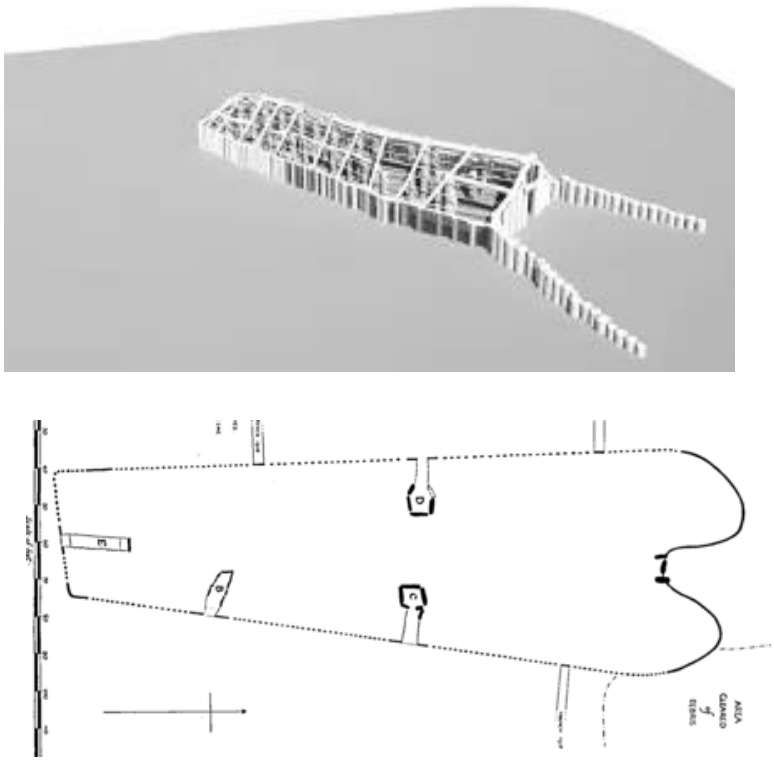


Figure 211. Top: Newly discovered Long-Barrow near Stonehenge (https://www.archaeology.co.uk/articles/features/stonehenges-hidden-landscape.htm); Bottom: Belas Knapp Long Barrow – note the 'horns' of the forecourt (Hemp 1929 :Plate 2)

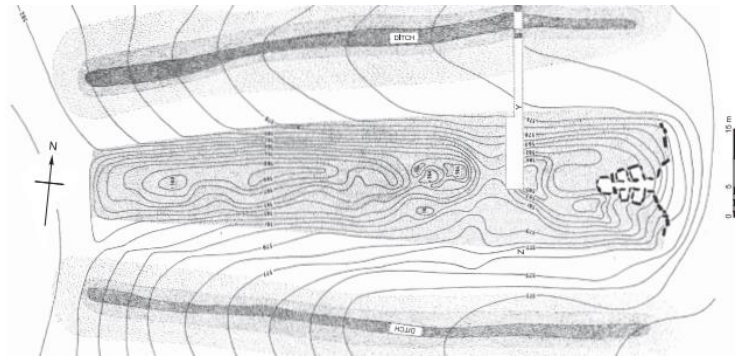


Figure 212. Possible bovine shaping at West Kennet Long Barrow (Wysocki et a 2007b)

The Long Barrows are often subdivided by internal wattle-fences (Fig 215, left), which do not show in the final monument, nor do they serve an obvious purpose construction-wise. It might be that they constitute 'rooms' of some kind (perhaps rows of cattle-stalls?). However, such bilateral division of a structure does not echo those of contemporaneous houses (which usually have a centre aisle, not wall) suggesting their symbolism is other than simply mock-rooms. Given the possibility of a bovine form suggested above, might they perhaps represent the extended backbone of a supine animal, with paired ribs either side? (Fig 215, right)

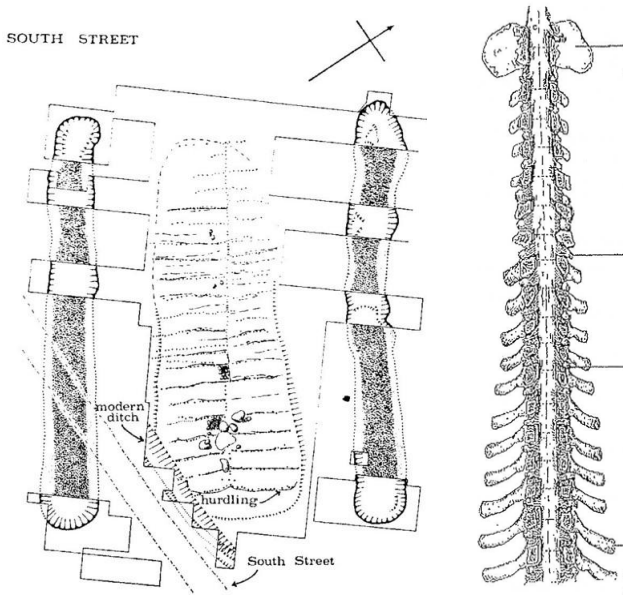


Figure 213. South Street long barrow compared to a cow's vertebra

These divisions are not unlike a rib-cage and/or vertebra. Of course, we could be looking at multi-layered symbolism – the sections being both 'rooms' inhabited by the spirits of the dead, but also sections within the body of the cosmic mother-cow. Looking at the depiction of the Egyptian Nut (Fig 216) we see her 'body' is likewise subdivided by 'rooms' that represent portions of the night-sky (decans), marking the differing constellations/asterisms along which the soul or sun-barque travels through the 12 hours of night (see Belmonte 2002, p.43, and Maravelia 2003) . The wattle divisions of the Long Barrows, might, then, also have marked sections of the night sky, stages in time/space along which the soul had to travel in its afterlife journey - the disproportionate length of the mound perhaps echoing the elongated body of Nut, as it stretched across the entire night sky as the Milky Way (and the Long Barrows of the chalk downs would have originally been a suitably 'celestial' gleaming white).

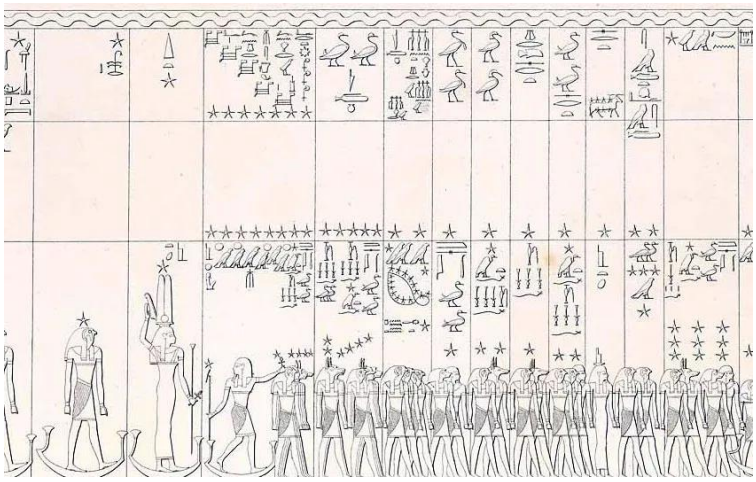


Figure 214. The sky subdivided into stellar regions, or decans, from the tomb of Seti I, (Lepsius vol iii)

We can be forgiven, then, for wondering whether the form of the Long Barrows and their successor sites (passage graves/henges) have galactic symbolism within them. In a following section it will be argued that the façade of Newgrange, with its kerb of quartz, has possible Milky Way symbolism inherent in it, being a circular monument seeking to ape a ring of stars about the sky. The linear Long Barrows, however, seem less obvious as Milky Way equivalents. However, despite knowing its form is annular, the Milky Way as viewed from earth is most often experienced as a gleaming white line across the sky, not a circle. During the era of Long Barrow construction the 'linear' Milky Way could increasingly be seen ringing the horizon in the pre-dawn sky at midwinter – thus a *linear* stellar form becomes *circular*, something that may lay behind the eventual abandonment of *linear* features such as Long Barrows or cursus monuments for *circular* enclosures in the third millennium BC (Fig 217).

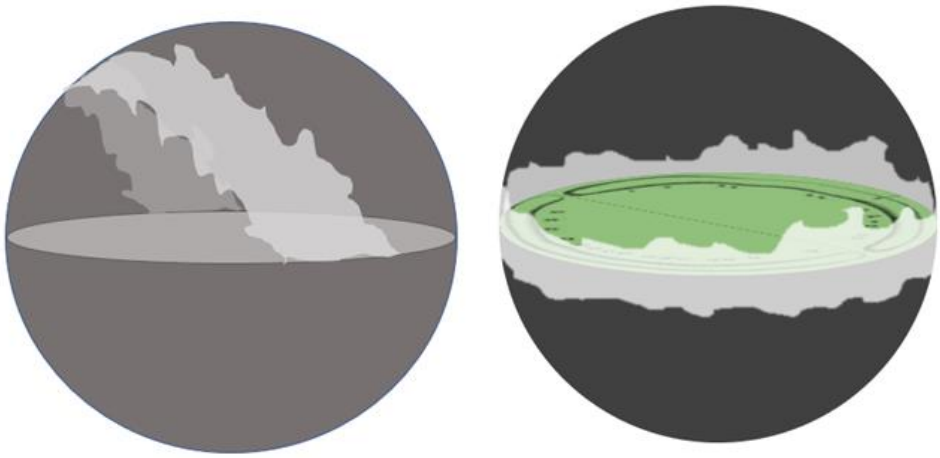


Figure 215. The 'linear' form of the Milky Way seen across the sky becomes 'circular' when it rings the horizon, a phenomenon visible between c. 6000 to 2000 BC, but most apparent c 4000-3000 BC.

That henges were not primarily burial sites is not an argument against such a proposed continuation of symbolism, as many Long Barrows were burial free, as we have seen. Until this point, the long chalk forms of Long Barrows, then, and perhaps the cursus monuments which sometimes accompanied them, might have indeed reflected the long white path of the Milky Way across the sky. This suggestion rests on an idea that these monuments are cosmological in form – and gains support from looking at their possible derivation from houses of the living, many of which are also associated with bovine forms.

6.14 Bucrania and the Cosmic House

Bradley, amongst others, has argued for the derivation of the Long Barrow from the houses of the living (1998, pp.36–50); that a collapsed house, abandoned after the death of its occupant(s) would have looked much like the later deliberately built burial mounds – so it may have been that from such abandoned structures the idea of a 'house for the dead' may have originated. This

need not invalidate the idea of the tomb as body of the cow-goddess, as there is a suggestion that houses themselves were zoomorphic and reflected the larger macrocosm.

Starting with the Vinča culture of 'Old Europe' (5700–4500 BC), bucrania (initially real skulls and horns, but over time becoming skulls coated in plaster and eventually wholly objects of plaster) were placed both inside and outside (on the gables) of houses. So far 30 have been identified in Vinča settlements in Serbia (Spasić, 298). Small clay examples (see below) are typical of the moulded forms – such as those found on an outer wall of house 4 at Gomolava (c. 4950–4650 BC) (Fig 218) and one probably set on a wooden post inside near the oven. The aurochsen skull from Jela-Benska bara typifies the alternative type (Fig 219).

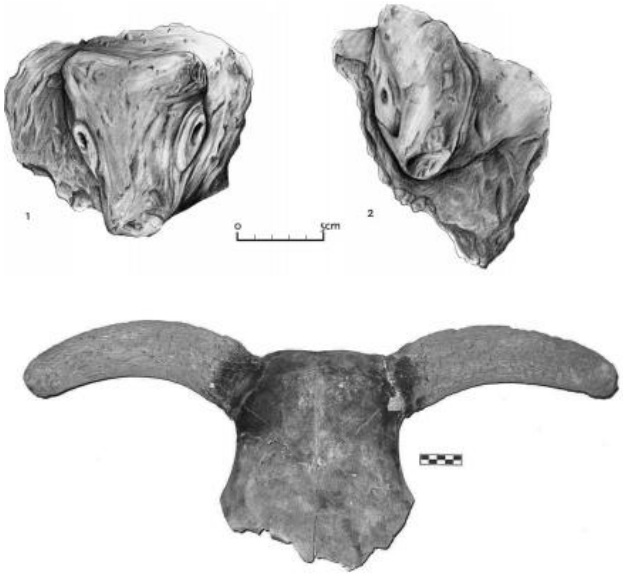


Figure 216. Bucrania from house 4 at Gomolava (Spasić 2012) Figure 217. Aurochsen skull from Jela-Benska bara (ibid)

Spasić states such objects were often associated

> "with the main supportive beam as attested in houses 1/1957 at Jakovo, 4/ 1975 at Gomolava and 2/2010 at Stubline. Thus, the symbolic potency of Bucrania can be perceived considering their relation to the main structural element of the house. Such a dichotomy points to the perception of the bucranium as the most important symbolic precursor enabling life in the house." (2012, pp.295–305).

The same symbolism appeared on houses of the later Cucuteni-Trypillia culture – as shown on clay models of houses or, perhaps, shrines (Fig 220).

Figure 218. Cucuteni-Trypillia model shrine/house with bucrania (Museum of the Ukraine)

What is the origin of such symbolism? This is where my mythology helps us, for the ridge-pole/supportive beam of the house in archaic societies is symbolic of the ridge-pole of the cosmos; Eliade argues that all buildings being based on the cosmogony: 'Every construction or fabrication has the cosmogony as paradigmatic model. The creation of the world becomes the archetype of every creative human gesture, whatever its plane of reference may be' (Eliade 1987, p.45)

In Near Eastern and other traditions, the Milky Way is seen as the ridge-pole of the sky– it is the tail of Tiamat, or the body of the Apep serpent nailed to the vault heavens in Egyptian symbolism from the New Kingdom (Hour 11 of the Book of Gates, see Hornung 1999, pp.55–77). Both Minoan and Egyptian traditions offer clear examples of a boviform cosmos – the Minoan 'horns of consecration', like the Egyptian Akhet hieroglyph, signify the place of the sun-rise (between twin mountain peaks). There is a link, then, between zoomorphic (bovine) macrocosm (the universe) and zoomorphic (bovine) mesocosm (the house) – if the cosmos is bovine in form, so is the house, as an echo of the former. The Egyptian cow goddess Hathor was both sky, house and tomb; as Hat Hor she was 'house of Horus'. The house, as Pásztor and Barna argue, always has a cosmic reference in pre-modern societies:

> "it is argued in anthropology that there is no phase in building traditional houses in which the position is not connected to a rite. Careful investigation of the orientation can reveal some attitude of prehistoric peoples to their natural surroundings that involve not only the terrestrial but also the celestial "landscape" as an inseparable unity." (Barna and Pásztor 2015).

The same imagery is suggested at Çatalhöyük, where 'house' and 'grave' are united in rooms that also function as tombs, with under-floor burials, but part of its origins (house as animal) may be much older – not just due to the probable observation of the groins of a wooden building, or wooden shelter, resembling a ribcage (one that does, after all, house the unborn infant), but that from Palaeolithic times onwards mankind's shelters will in many instances have been, like the tepee of the plains Indians and the yurts of the nomadic Mongolians, shelters of

animal skin (such as the Mesolithic hide ‘tents’ inferred from remains at Mount Sandel, *see* Woodman 1981). The idea of dwelling inside an animal, in its warm belly, is ancient – and, therefore, the idea of the entrance as a mouth or vulva.

Such cosmic/stellar imagery lies behind the starry-female decor of the house at Ludwigshafen Seehalde of moulded breasts covered in dots (stars?) and accompanied by chevrons, dots and diamonds, as discussed earlier. The connection of female form with stellar imagery suggests this house bore a depiction of females in a cosmic (celestial) setting - suggesting an affinity between the structure of the house and of the cosmos. Such stucco breasts occur at Çatalhöyük and are associated with bucrania. If we look at the imagery of the goddess found in the ‘shrine room’ at Çatalhöyük we see an image of a (horned?) female with her legs apart in the act, presumably, of giving birth (Fig 221). Below her, as if emerging from her womb, is a small bucranium, beneath which another three larger bucrania can be seen. Here is a clear indication of a relationship between the bucrania and the female form.

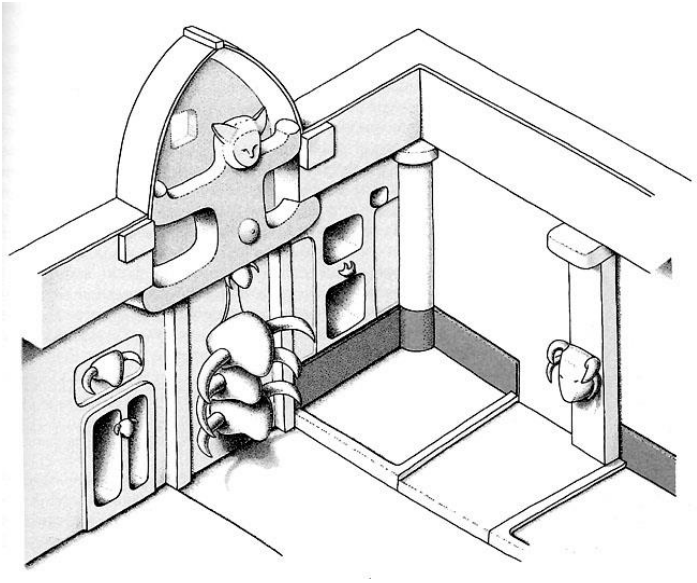


Figure 219. ‘Shrine’ at Çatalhöyük (after Mellaart 1967.150, Abb. 38)

Enough examples of bucrania associated with female figures (especially the womb area) exist to have prompted Cameron (1981, pp.4–5) to argue that the bucranium was a symbol based on the female reproductive organs, the horns representing the fallopian tubes and the face the womb. While this may be the case, in part one the interchangeability of the mouth/womb of Nut and the face-belly of Baubo in Egyptian and Greek iconography was suggested as originating in the rising and setting of the sun the same point in the Milky Way, which acts as both mouth (swallowing the sun) and vulva (giving birth to the sun). The image of bucranium as womb, of course, has implications for the role of the cattle skulls found in ritual contexts in the British Neolithic.

The orientations of both tombs and houses in the Neolithic, and the meaning of such orientations, has long fascinated archaeologists. In many cases we see similarities between house and tomb (where they both exist in close proximity) such as the houses at Barnhouse on Orkney oriented south-east, like some chambered tombs in the locale (though not Maes Howe), arguably to catch the rays of the rising midwinter sun. (Ruggles 2005, p.239). But many have argued for less arcane reasons for orientation, such as prevailing wind direction or the wish to expose the largest possible portion of roof towards sun-light to increase warmth. While such considerations might not be a prerequisite for tombs, further analysis of house orientations in recent years have shed doubt on such practical explanations. Bradley, for instance, suggests a symbolic reason behind the orientation of LBK houses (c.5500–4500 BC)– one that points towards a 'point of origin' (Fig 222).

> Far from following the directions of the prevailing winds, the orientations of those buildings seem to conform to a much more basic alignment. They appear to reflect the sequence and direction of Linear Pottery Culture colonization. Thus they face approximately north-south in central Europe and are deflected towards the west and northwest towards the limit of expansion.' (2001, pp 50 – 56)

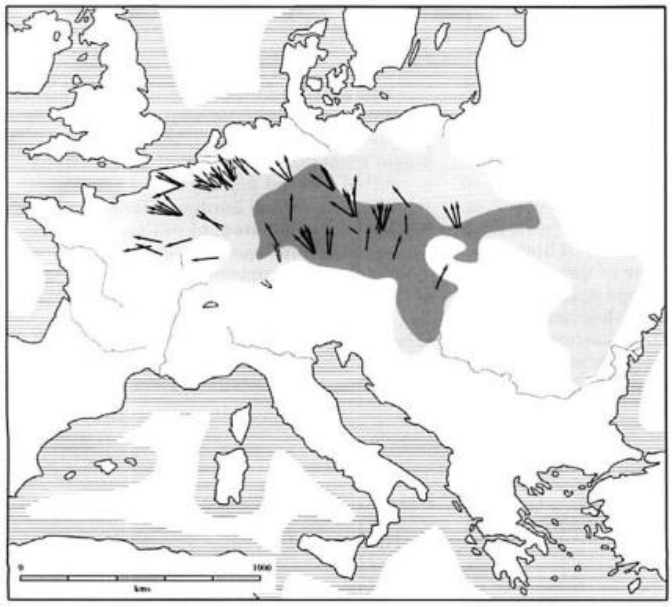


Figure 220. Orientation of LBK house doorways (source: Bradley 2000)

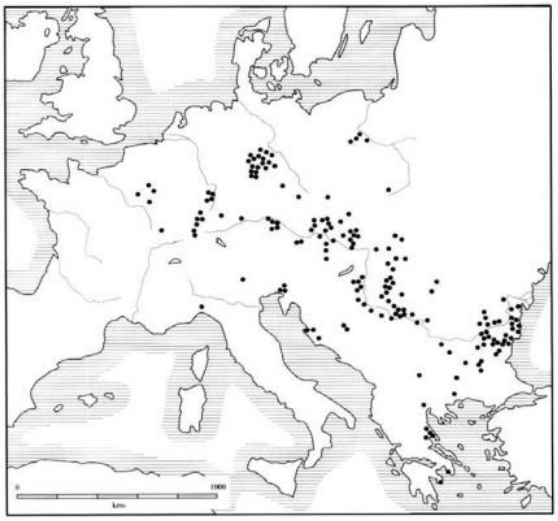


Figure 221. Distribution of Spondylus shells in Europe (source: Bradley 2000)

And that:

> "…it [is] possible that these orientations were considered propitious because the inhabitants believed themselves to share a common origin?" (*ibid*, p.55)

Bradley further suggests the pattern of deposit of Spondylus shells in LBK graves (Fig 223) reflects the same fascination with this 'point of origin'. Alignments, then, were possibly focused towards a symbolically important direction.

> "…the long houses of Neolithic Europe were not only dwellings but monuments in their own right which charted the history of the first farming communities. The forms of these buildings mapped out the lives of the living and recalled the importance of the dead." (*ibid*, p.55)

The alignment of Long Barrows in Britain, however, varies somewhat from the limited arc of LBK house orientations, from which Bradley argues they ultimately derive – perhaps as they were saying less about where the people came from and more about where they thought they were going at death. But can we be sure the LBK house orientations did not share such an extra-mundane origin? The changes in orientation that Bradley notes may not have been due to some perceived point of geographical origin but to something in the skyscape, whose position may have been 'changing' in respect to the houses as they moved north-west – both due to changes in geography that would have shifted the viewpoints of certain stars along the horizon – and changes due to precession that would have added to this effect.

Looking more closely at the LBK house orientation arc (Fig 224 A), the alignments are mainly to the south east, swinging to south-south-east (*see* Beneš et al 2016, pp.26–28) , and so in many cases fall out of the arc in which both sun and moon will be seen to rise (or set). So, something is limiting or defining the direction, but it is not solar or lunar. It may be the rising points of a star – but it varies too much within a limited time span and geological spread to suggest a single

star was being singled out. However, it does, rather closely, match the position of the Milky Way at both the winter solstice sunset and sunrise c. 5500 BC, (Fig 224 B, C & D; note the reconstructed sky images have been flipped 180° horizontally to match the image of the orientation of the houses on the left, as if we were seeing the sky, like the house orientation, from above). As seen below, at sunset on the winter solstice the Milky Way rises south east, by 9pm it has moved further south; at sunrise it has completely moved about the sky 180° and is rising directly south. This may be coincidental, but arguably the Milky Way alignment fits the pattern better than the sun or moon, neither of which rise so far south of south east, and none in the west.

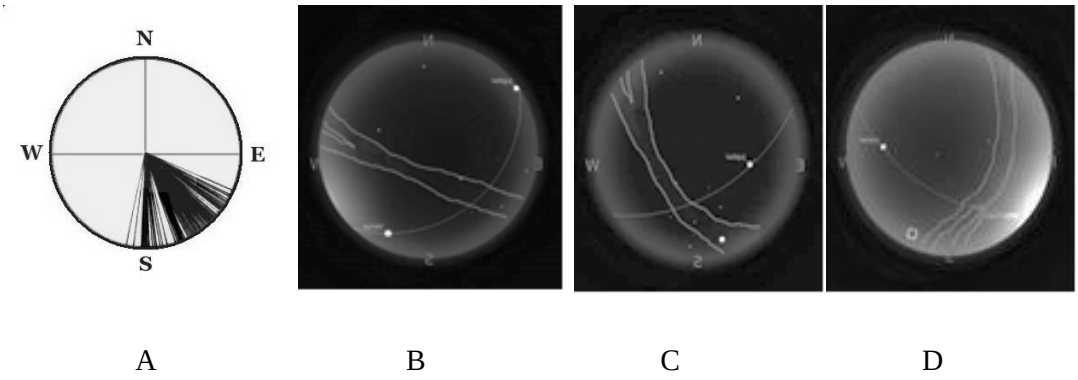


Figure 222. A: orientation of LBK houses; B: orientation of Milky Way at midwinter sunset C: the same at 9pm that night D: the same at sunrise

Might the relative mobility of the Milky Way also help explain the multi-directional alignment of Long Barrows in Britain? If we look at Ashbee's summary diagram of barrow orientation (1970, p.28) (Fig 225) we see the clear majority are oriented to the east, within the limits of the sunrise arc.

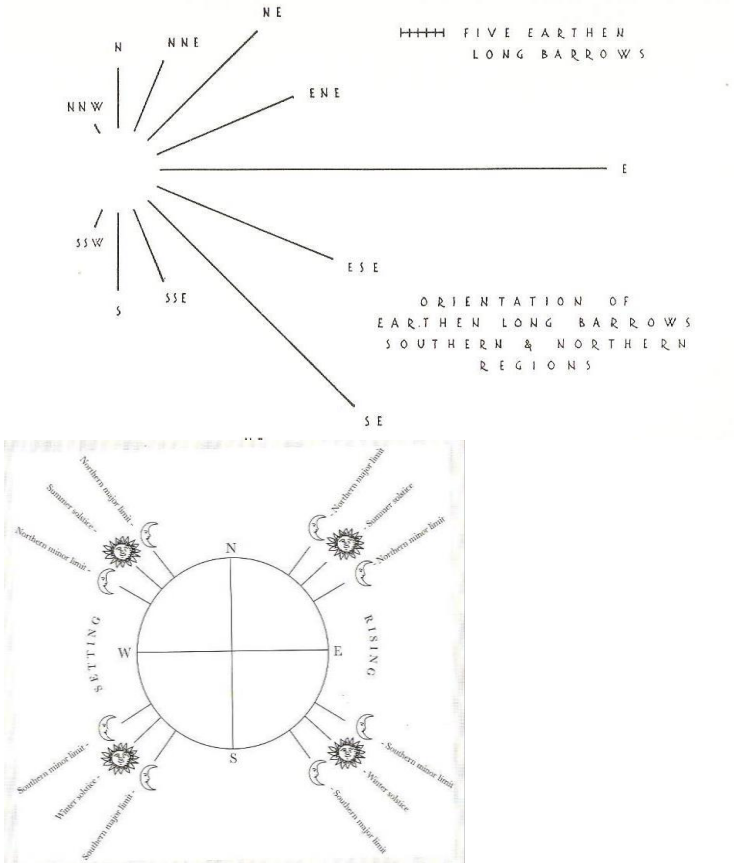


Figure 223. Orientation of long barrow entrances (Ashbee 1970) , compared to the rising and setting limits of sun and moon, after Ruggles (1999)

However, enough lie outside of this to suggest the sun was not necessarily the defining factor, nor the moon, for although its most northerly and southerly rising points are beyond those of the sun, some tomb orientations fall outside even the imits of moonrise/set. The Milky Way, however, offers a workable alternative, and it has clear symbolic meaning in the myths of the P-IE peoples and Near Eastern civilizations that fits the ritual sites we are examining.

Ashbee's diagram suggests that the most important alignments of British Earthen Long Barrows are to the east and south east; we have noted how the latter conforms to the pattern of the Milky Way at midwinter sunset. The eastern alignment is more common still – yet this has suggested to researchers a solar orientation (at the equinox); yet if we are not looking at solar events but galactic, then this eastwards orientation fits the direction of the Milky Way at many points during the year – in the pre-dawn sky in late spring through to the summer solstice, for example, or after sunset in the Autumn – it only isn't visible in this orientation in the winter as it rises at this time of year in the day. This might suggest that the alignment was highlighting the reappearance of the Milky Way as an east to west band in the sky as a signal of the spring – coinciding with the rebirth of the sun. While this might suggest an alignment 'date' not dissimilar from that of the equinoctial sun, the alignments of structures to the Milky Way

would, at least, fit those sites that fall outside of the luni-solar arcs – as well as showing a marked concentration on the midwinter and spring dates (early May) that are later found in the henges.

Returning to LBK house orientation, the earlier houses, oriented more south-easterly, would have been built at a time when the rising position of the Milky Way in the spring was, indeed, more south-easterly than in the era of the Long Barrows. This apparent difference in orientation, then, between Continental LBK houses and British Long-Barrows, might not be different at all – as both could have been referencing the same celestial phenomenon, but one that had changed its position relative to the horizon in the 1500 years that separate the mid-points of these traditions.

This cursory look at possible configurations of the Milky Way during the Early Neolithic has sought to discover whether the alignment of tombs and the houses from which they may have been derived, may be explicable as relating to this feature rather than other heavenly bodies. The possibility is supported by a Neolithic worldview concerning stellar rebirth and traversing the heavens rather than observing sunrises, and it presents us with an entirely new model with which to work. It is an idea rooted in the bovine symbolism found within the tombs, suggested by the cattle remains they contain, plus their possible bovine/celestial shape (long, white, tapering) - all possible pointers to the Milky Way, which in Near Eastern and P-IE myth is associated with a celestial cow-goddess. When combined with the worldwide belief in the Milky Way as a 'path of souls' – we begin to see why the ancients might have wished to align their tombs with it. The Milky Way as a possible source of ritual alignment is an alternative hypothesis to previous suggestions, but while it remains theoretical, it at least draws on both the structural (bovine) symbolism inherent in the monuments, as well as the posited reconstructed mythology, rather than on orientation alone.

In summary, it is possible that the Long Barrows of Neolithic Britain were bovine in form and offered the soul of the deceased access to the womb of the cosmic goddess of the Milky Way. These houses of the dead were both boviform and gynomorphic, like those of the living, and replete with cosmic symbolism. The Long Barrows aped in form the celestial body of the mother cow through which the soul would journey for rebirth after being devoured on the western horizon at death. To enter the tomb (alive or dead) was to journey into the celestial body of the sky-cow, to become an ancestor in the stars, and perhaps one day to be reborn back on earth. But to what extent might the later henge tradition have drawn on or evolved from such symbolism?

6.15 Cattle at Stonehenge and Woodhenge

In the previous section that dealt with an analysis of cattle bones in Long Barrows, the theory was put forward of an underlying symbolism concerning the tomb as the body of the cow with the entrances/proximal ends and axis of the barrows as focal points for *bucrania*; it was also suggested that the shaping and orientation of such monuments might have been related to the Milky Way; an analysis of LBK house orientation proposed a similar possibility. Although LBK houses showed no evidence for bucrania as were found in earlier houses of the Vinča culture, it may have been that such accoutrements had by then become more commonly associated with 'houses of the dead' than of the living. Given the primacy of cattle symbolism in the world-view and symbolism of these early Neolithic features it is apposite to follow this analysis with a close look at the placement of cattle bones in the Mid to Late Neolithic to see if similar symbolism is present in the ritual features of this age (most notably henges) as the Long Barrows go out of use; therefore in this current section we will begin with an analysis of the cattle remains found at Stonehenge, and from there embark on a discussion on their possible meaning, which can be gleaned from the sex, date and position of the remains.

The cattle bones found at Stonehenge are primarily to be found in the ditch, but with only just over half the ditch fully excavated the conclusions presented below cannot be considered final. However, to presage the following analysis, Cleal has suggested that the symmetry of the deposition of cattle mandibles/skulls, and their relationship to the entrances at Stonehenge, is structured (1995, p.110). The rarity of complete skulls is noted, though Serjeantson and others have suggested that teeth and mandibles form the toughest parts of skulls thus where such occur we may nevertheless be looking at remnants of skulls that have become fragmented before or after deposition (Serjeantson 2011, p.23) – something that is possible if these skulls had been placed on posts at or near the entrances (or elsewhere) prior to their burial, as seems to have been the case.

The bulk of the faunal and other ritual evidence belongs to the first periods of the monument, subdivided into phases 1, 2 (-) and 2a. After this period the ditch is levelled, and attention becomes focussed on the centre of the monument.

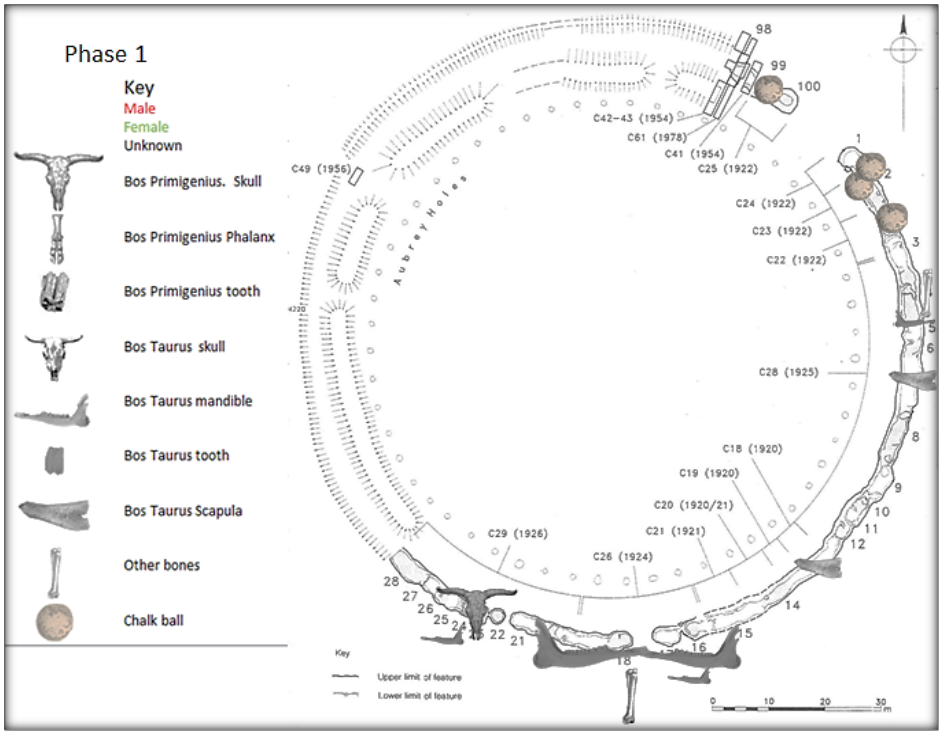


Figure 224. Distribution of cattle bones and chalk spheres in Phase 1 of Stonehenge (after Cleal 1995)

In Phase 1 (3100-2900 BC), as shown in Fig 228, we see emphasis is placed on the southern entrance (the area C26), and the south-south-westerly (SSW) entrance nearby (in C29) – yet this does not preclude evidence of ritual activity to the north-east, where the focus will be situated in phase 2.

The ditches either side of the southern entrance (in Hawley's sections 17 and 18, going clockwise) each contained the lower mandible of a domestic cow or ox (sex not qualified), a left mandible (AB131) in section 17, and right (AB126) in 18 (Cleal 1995, pp.86–88). Each was radiocarbon-dated to 3350/40–2920 cal BC, suggesting the bones had been kept for some time prior to deposition. Associated with these finds were a few teeth of a two-year-old calf, though whether these once formed part of a more complete skull is unknown. Several limb bones were also recorded showing evidence of feasting prior to burial.

Moving to the SSW entrance here we find (in section 23, the western spur of the entrance) the horn-cores from the skull of a young cow/ox dated to 3350-2929 cal BC, plus some bones belonging to a calf (subsequently lost). The skull fragments have been argued as possibly coming from a domestic bull, given their size, or possibly from a wild Aurochsen female. The other cattle bones from this period come from possible jaw fragments to the east, in sections 3, 4 and 7, which include a scapula (Cleal 1995, p.441) – yet little is made of these finds other than brief notes made by Hawley mentioning the presence of bone.

In the same period the NE entrance is marked by two deep ‘craters’, as Hawley calls them, at the terminal ends (sections 100 and 1 clockwise) showing evidence of burning, and antler deposits. Beyond the terminals, in the neighbouring sections (99 and 2 respectively) we find 4 chalk balls – 1 from section 99 and 3 from section 2 (Cleal 1995, p.74).

Phase 2 (Fig 227) is dominated by a change in emphasis towards the NE entrance, as far as cattle remains are concerned. In section 100 we find the almost-complete skull (AB115) of a cow, while in the corresponding terminal section 1 we find a skull (AB103) of a female (possible) aurochsen, and a tooth from the upper mandible of a bull aurochsen. A similar tooth is found due east in section 7, while section 15 yields a tooth and horn core. Aurochsen phalanges are also evidenced in two southerly sections (Cleal 1995, chapter 6).

We also find a chalk ball in section 23, the western terminus of the SSW entrance, and another a few feet towards the interior of the entrance, near the Aubrey holes, but in line from the centre of the site with section 21 (Cleal 1995, p.137).

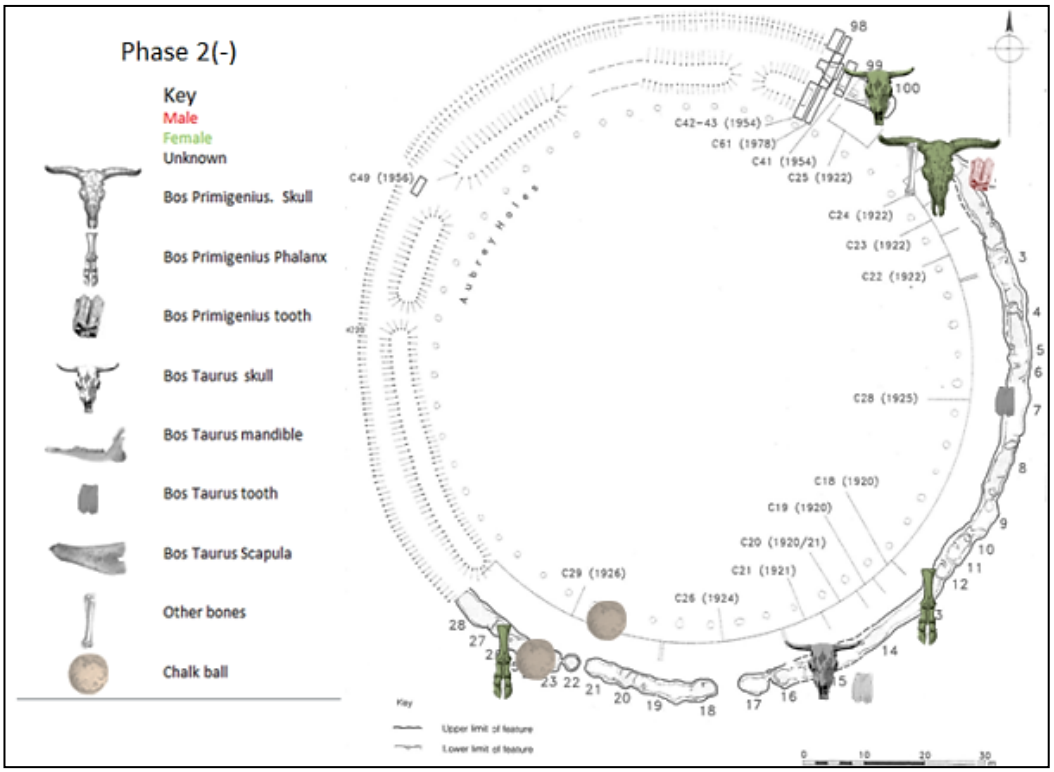


Figure 225. Distribution of cattle bones and chalk spheres in Phase 2(-) of Stonehenge (after Cleal 1995)

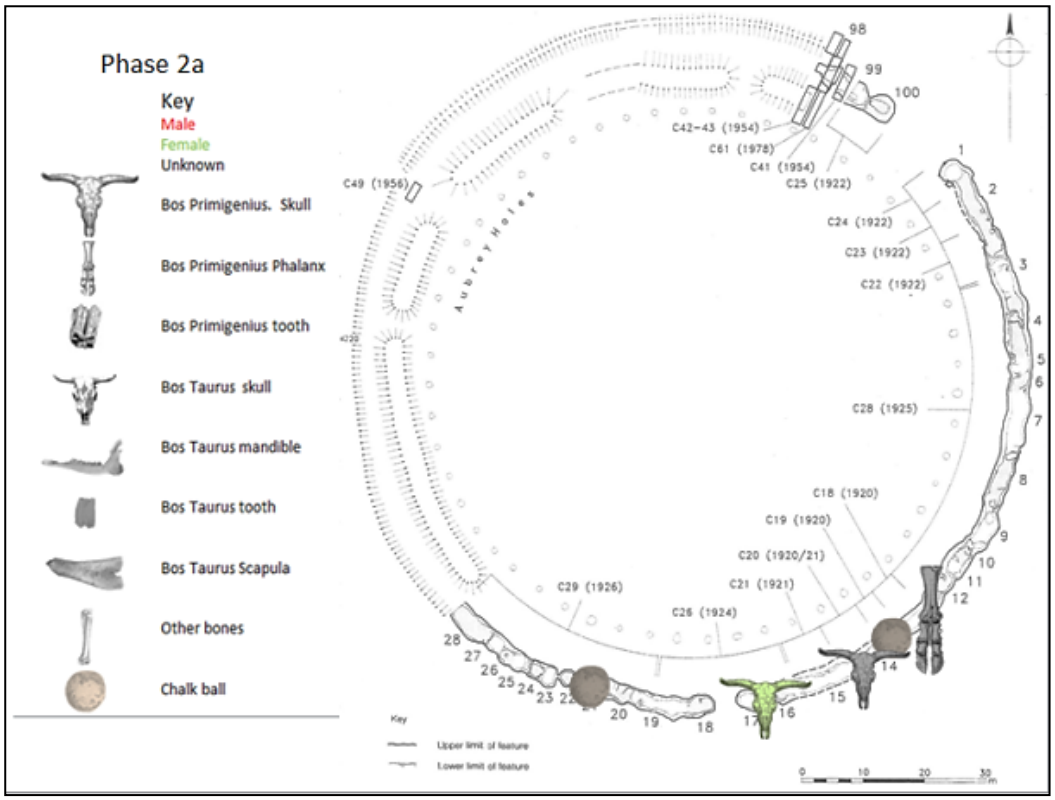


Figure 226. Distribution of cattle bones and chalk spheres in Phase 2a of Stonehenge (after Cleal 1995)

In Phase 2a (Fig 228) a horn core from a female aurochsen (AB78) is found in the eastern terminus of the southern entrance, and another from section 15, while neighbouring sections 14 and 13 contain a chalk ball and an aurochsen phalanx respectively.

The eastern terminus (section 21) of the SSW 'entrance' now contains a chalk ball (*ibid*, p.136), mirroring its counterpart from section 23 of phase 2(-). Note the importance of the SSW entrance for such placements – seeing 3 balls deposited here; the NE entrance has 4 over time, the S entrance has none.

6.16 Discussion: Skulls and entrances

Primary analysis suggests in these phases the repetition of a basic pattern through a possible change in focus/orientation. The most obvious pattern, as Serjeantson suggested, is that of correspondence between entrances and skulls as seen reflected in the appearance of cattle skulls at both the southern entrance and SSW entrance in phase 1, at the NE entrance in phase 2(-) and again at the southern entrance in phase 2a. The two lower mandibles (left and right) of the cattle of unidentified sex at the southern entrance in phase 1 seem to suggest the left and right sides of the cow; these are not from the same cow, but as the bones were considerably old on deposition, the possibility is they had been displayed (on posts?) as relics, and kept well preserved, suggesting they were prized/valuable (ritual) objects. One way to read this deposition is that to

enter the site between the left and right side of the cattle jaws was, as discussed in relation to Long Barrows, somehow to enter the body of the cow. This may have been even more apparent had these relics once been displayed either side of the entrance prior to being deposited in the ditch. As we saw above, the sex of the animals could not be determined; but the presence of a younger animal may suggest a female and calf, or perhaps a male and female, either side of the entrance, with calf. The likelihood of the former is increased by the fact that the skulls from phase 2 at the NE entrance were both female.

The (possibly female) aurochsen skull from section 23 (SSW entrance), accompanied by calf remains in phase 1, seems to ape the imagery of the southern entrance, though if a partnering skull had existed in section 21 it is lost or had been disturbed by later depositions.

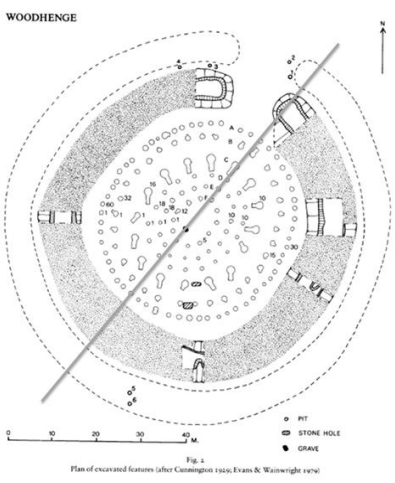
Phase 2 sees the appearance of cattle skulls in the NE entrance – both female, and one possibly of an aurochsen. The non-aurochsen skull is so complete we can argue that the imagery of walking between two halves of a single jaw that could be read into the remains from the southern entrance in phase 1 is not present here, yet that needn't mean the symbolism of entering the body of the cow could not be relevant here too. In this period cattle skulls are not placed in any of the southern entrances. Only in phase 2a is there evidence of a horn core in the southern entrance, but also in this period we see an interest in the south-eastern bank between sections 18 and 21, beginning with a horn core in section 21 in period 2-. If period 2 sees a change in emphasis towards the NE because of solar interest (see 4.1), then it may be understandable why the corresponding SE segment, corresponding to the midwinter sunrise, becomes of interest, at the same time.

In summary, a symbolic link between skulls and entrances is present at Stonehenge, though we cannot tell from the evidence whether the placement of skulls and the corresponding placement in the opposing entrance of chalk spheres (see below) suggests that one be seen as an entrance and the other as an exit. There does seem to be a reversal in placement between spheres/skulls in the southern two entrances and the NE in the first two periods (1 and 2(-)), and then again in phase 2a – but the reason for this cannot be ascertained (if there was a reason). However, the simple argument that skull = head and therefore = entrance is made unstable due to symbolic interpretations of *bucrania* from elsewhere in the Neolithic world with the womb.

As to the nature of the remains, Cleal demonstrates that of the cattle remains analysed belonging to these initial periods (1-2a), that is of 23 samples, 3 were most likely male, while 8 were most likely female. She notes how 7 were domestic female, 4 either male or female domestic, 3 domestic male, 1 definite female aurochsen, 4 unknown aurochsen and 4 intermediaries (could be wild or domestic – a wild female might be similar in size to a domesticated bull). But the

possibility remains that 4 of the aurochsen may be female, and one of the males could be an 'intermediate' female (1995, p.441). Either way, the female to male ratio is noticeably high as it stands and could be even higher. This is suggestive of the importance of the female cattle in cult and ritual evidenced in P-IE myth. If we were looking at the remains of feasting alone, without symbolic weight attached to the age or sex of the animal, we would expect to see a larger proportion of male calves - the 'waste product' of dairying. Regarding the entrances, where the sex can be established, we are looking at female animals – suggesting a link between the entrances and the female cow similar to what we have argued for the preceding Long Barrows. A similar symbolic pattern of cattle deposits exists at Woodhenge, to which we now turn.

Woodhenge, to the south of the Durrington Walls, and dated to c. 2350 BC displays a similar set of stellar and solar alignments as nearby Stonehenge; the alignment of the concentric timber monument (normally suggested as being towards midsummer sunrise/midwinter sunset (Burl 1983, p.52)), however, is at odds with the orientation of the entrance of the feature. The solsticial alignment does not align with the entrance of the henge but scuffs one side of it (Fig 229). This might seem like an example of poor design but for the fact that within the henge were post-holes for two stones, neither of which survive, yet which do align with the entrance (Fig 230), marking a bearing of 196–198° SSW from the latter looking in to the monument. Might the entrance and these stones have marked an original stellar orientation and the concentric timber settings a later, solar, one? Such a later modification would fit the pattern of the adaptation of Stonehenge towards a more accurate solar orientation in its later (Beaker) phases, as well as the orientations defined by the stones at Bryn Celli Ddu henge prior to its adaptation as a midsummer sunrise aligned passage grave. Regarding the entrance/stone-hole orientation at Woodhenge, the viewing angle from the entrance would afford the viewer the site of the setting of Crux.



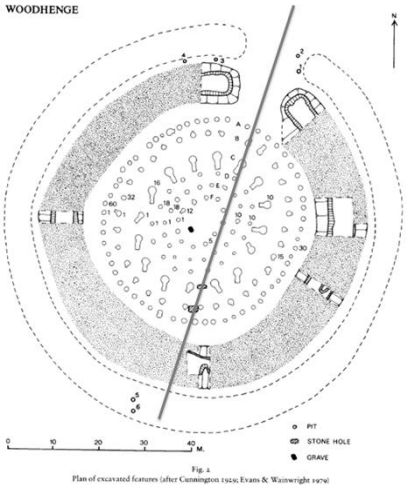


Figure 227. Solar alignment at Woodhenge (after Pollard 1995) Figure 228. Stellar alignment at Woodhenge (ibid)

A stellar alignment based on the stones and entrance would explain why the posts did not face the entrance of the bank and ditch, as these had been built with a different alignment in mind (or even at a different date - though whether earlier or later is a moot point).

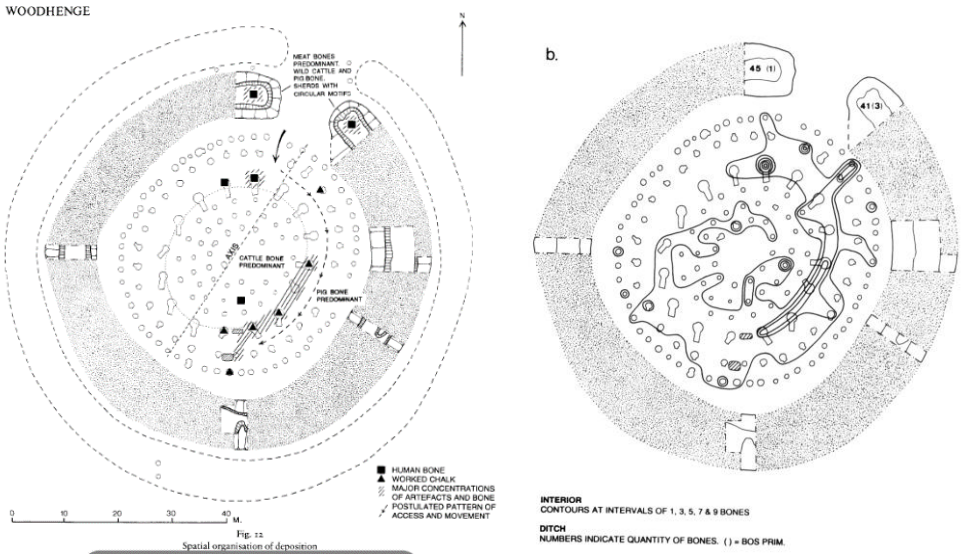


Figure 229. Distribution of cattle bones in Woodhenge (after Pollard 1995) Fig.2. Figure 230. Distribution of all bones.

Woodhenge, like Stonehenge, provides a wealth of faunal depositions, the analysis of which are of great interest considering the cattle depositions discussed earlier at Stonehenge.

Pollard's map of the cattle bones found at Woodhenge (Fig 231) (1995, p.144) shows a massive concentration at the entrances – with examples of aurochsen present, too – though it is only at the terminals of the ditch we find deposits, they absent from the remainder of the ditch, though present within the confines of the enclosure (145). If we note the contour of internal distribution of cattle bones within the level area of the enclosure (Fig 231), which is matched by other bones on the site (Fig 232), we see how it is concentrated in the eastern side of the monument in an arc that sweeps past the stone settings; its pattern matching that of the path of the Milky Way when it is aligned with the NE entrance. Only cattle remains were deposited along this line: remains of pig are found further from the centre in the outer rings only. While no chalk spheres have been found, Pollard did note a concentration of pottery fragments in the ditch terminals with 'circular designs' proliferating (1995, p.151) In Fig 233 we see a similar pattern to that of cattle bones in the chalk objects found in the henge; is the white of chalk also to be associated with the Milky Way?

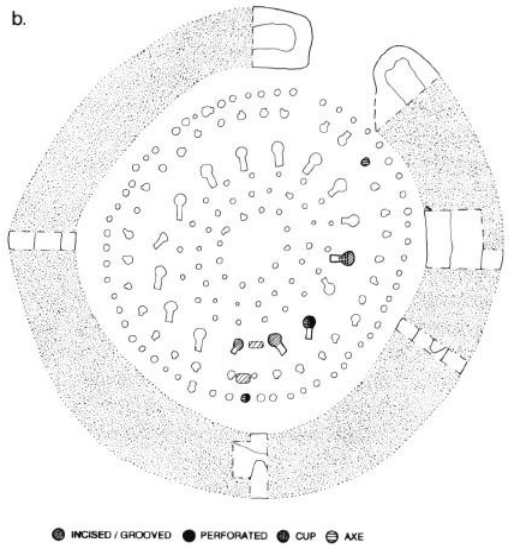


Figure 231. Distribution of chalk objects found at Woodhenge (Pollard 1995)

Pollard says that:

> Quite possibly, the spatial structure in deposition was tied into patterns of formal movement, as argued for the Sanctuary, Site IV, Mount Pleasant (Pollard 1992), and the Southern Circle at Durrington Walls (Thomas 1991, 48-52). Indeed, the greater degree of abrasion on the sherds from the eastern side of the timber rings at Woodhenge could be indicative of exposure to trampling, amongst other things. Possibly a process of clockwise procession was intended along the 4 m wide corridor between rings B and C, much as suggested for the Southern Circle (Thomas 1991, fig. 3.7) (1995, p.152)

This suggests a movement from the NE entrance along the inner side of the eastern ditch towards the south – following, we could conclude, the path and direction of the Milky Way – with less activity, or perhaps avoidance of, the western side. This might explain why at Stonehenge, when the view of the Crux from the SSW entrance was lost, a new viewing position was not established further west, but instead to the east, aligned on the S entrance. Perhaps the western side of the monument was considered taboo, or simply did not fit in with the ritual processions within the site that favoured the eastern side, if Woodhenge can be used as a model for this. It may also have been that the centre of Stonehenge had become restricted (post-holes suggest some form of delineation) and so a sight-line needed to be established elsewhere. Pollard makes the same claim as regarding access at the Sanctuary at Avebury and Mount Pleasant – that the centre of the site was perhaps restricted in access (Fig 234). At Stonehenge the timber avenue aligned on the Crux group was possibly constructed to the east side of the site where it could be viewed publicly.

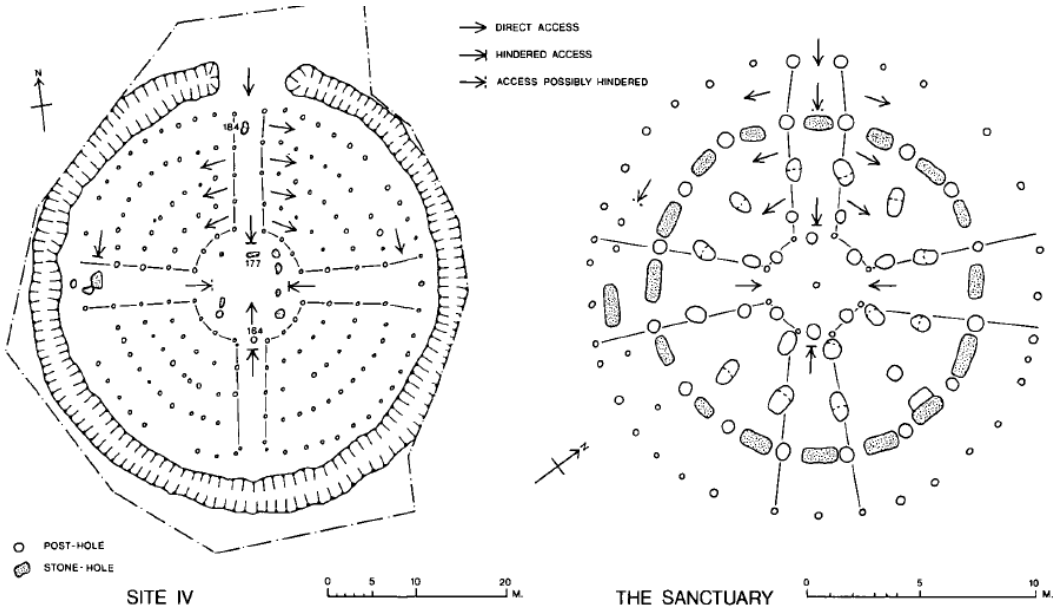


Fig. 8

Postulated patterns of access and movement within the Sanctuary and Site IV, Mount Pleasant. Based on Cunnington (1931) and Wainwright (1979)

Figure 232. Postulated patterns of access and movement within the Sanctuary and Mount Pleasant Site IV (Pollard 1995)

Whatever the activity in the centre or western segment, the concentration of chalk and cattle bones in a SE arc at Woodhenge, on a pattern that would have aped that of the Milky Way when the latter was rising/setting in line with the entrance is surely noteworthy. It suggests symbolic activity taking place in an area designated by a celestial analogue, with the implication that this activity was connected to the stellar pattern – either enacting something celestial or trying to mirror the heavenly locale so that to tread the path within the henge was to symbolically traverse the sky. We recall a similar ritual act in the *Heb Sed* courts of Egypt where by crossing the courtyards the Pharaoh was symbolically crossing the sky, and therefore revealing his connection to the sun and heavens (Uphill 1965, p.371).

The link between cattle and henges has only been touched on here, as it beyond the remit of a study mainly focussed on astronomical alignments – yet it suggests areas for future research. But this cursory analysis suggests that there is a similar depositional pattern at circular ceremonial sites concerning cattle-skulls to suggest on some level a continuation of the symbolism and ritual use of cattle as found in the Long Barrows. The implications are not only for a continuation of traditions despite a change in form of monument, but also a suggestion that some of the symbolism of the Long Barrows may have been incorporated in to the Henges – perhaps suggesting funerary use or connection with ancestral spirits, for instance – yet funerary does not necessarily imply burial. Perhaps a better turn of phrase might be a place of transformation – one that might have involved the dead becoming ancestors, but equally where

communication with such ancestors, spirits or divinities was undertaken, in acts involving healing or divination.

6.17 Chalk Spheres

Returning to Stonehenge, the reversal/alternation of deposition patterns of skulls between the southern entrances and the NE is of possible significance, but also reflected in this pattern is the distribution of chalk balls (or *spheres*, a word that will be used from now on as it carries less gender-specific connotations) which seem to appear (at least at the entrances) where skulls do not. Initially these are located in the NE, and at the opposing entrance to that delineated with cattle skulls. When the skulls appear in the NE correspondingly the chalk spheres become associated with the opposing entrance – the SWW entrance, in phases 2- and 2a (excepting one found in the SE section in phase 2a).

To fully understand such a pattern, we would need to know what the symbolism of the chalk spheres meant; they have normally been seen as male symbols, especially in light of the chalk phallus found closer to the centre of the site; in part two we saw how in the Second Battle of Moytura the three stones that are placed in, and then dropped from the Dagdae's belt, could be interpreted as both testicles, seeds and as the three belt stars of the constellation of Orion. This triple number of 'stones' and subsequent actions of the Dagdae, bearing the daughter of Indech on his shoulders, suggested a clear astronomical analogue with Orion (as sun-bearer) – but as to whether the chalk spheres may have been connected to these stars, this cannot be proven. Although they occur in the context of entrances to the henges, there is no seeming correlation between their placement and the rising or setting position of Orion – therefore the link rests as a hypothesis that future research might help prove or disprove. That the spheres might be stars or the sun or moon is a possibility suggested by their whiteness, but equally the idea of them as female symbols, as breasts or eggs is possible (and we should not forget the sun in P-IE cosmology and early P-IE mythology is female). The idea of them as breasts recalls the ball-like breasts depicted on certain Continental monuments (Fig 235).

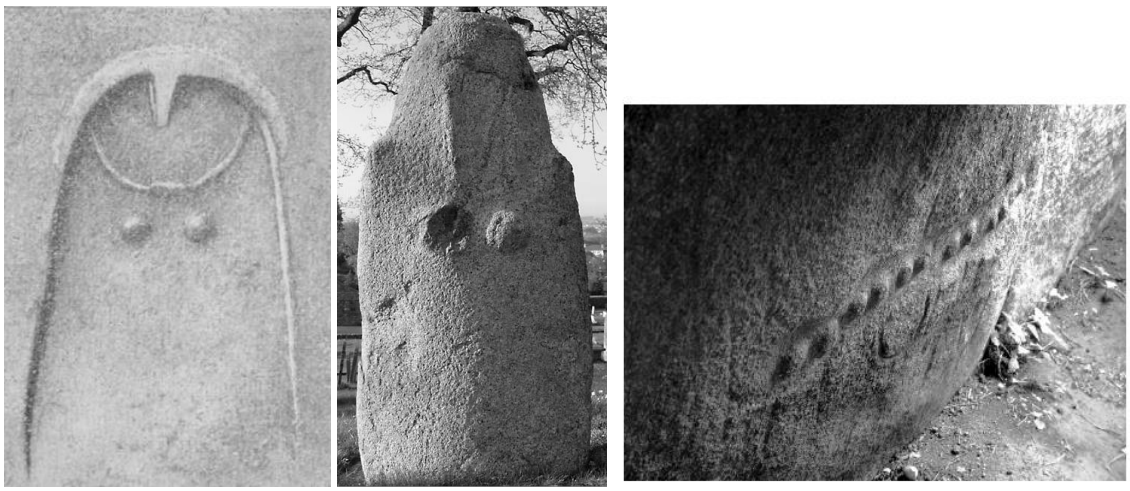


Figure 233. Breasts on megalithic carvings depicted as simplistic spheres

What we can say is that by appearing in the opposing entrances to the cattle skulls they formed part of the same ritual pattern; the pattern of deposition suggests one in which both sphere and skull form part of a shared rite, even if they represented diametrically opposite functions. It suggests a rite, or rites, in which certain entrances each had an associated quality or significance; what that significance was we cannot at this moment say – it may have been that one entrance was a 'male' entrance and the other 'female'; that one represented the 'head' of the cow and the other the 'womb', or one the vulva and the other the breasts; that one represented seed-crops and the other animals and dairying; the list could go on. The important fact is that we can at least define one area of ritual practice that suggests different entrances were accorded different statuses, and that even if the entrances' qualities were not fixed, or had become changed, i.e. the NE entrance could be at different times a 'skull' or 'sphere' entrance, the fundamental polarity of 'sphere' or 'skull' remained expressed within the site, just as the polarity of Crux and Cassiopeia was witnessed through the entrances – and it may be that the placement of skull and sphere reflected that polarity, as opposite sides of the sky.

The correlation between bovines and the stars/rivers in IE myth provides a context for both the deposits of cattle bones and chalk spheres, and the positioning of the entrances (most importantly the NE/SW and NW/SE alignments) – none of which are explained in an entirely solar context.

6.2 Entrances and Exits.

6.21 Henge banks and the stars – a Milky Way analogue?

Archaeology, then, has provided a definite link between henge and passage grave entrances and cattle symbolism – and suggests these structures may have taken on some of the roles of the earlier Long Barrows, which were themselves multi-function sites and not merely mausoleums.

Yet any suggestion of continuity has to overcome the hurdle of the change of form from a linear, narrow, structure to a circular henge; this change is explicable if the form referenced that of the Milky Way, which could be seen as both linear and circular, yet whose circular form (on the horizon) became most obvious c. 3500–2500 BC; thus, the era of henge-building corresponds to a time when the full circle of the Milky Way was visible on the horizon; and it may have been this circle in the sky that was being mirrored in the banks of the henge. The Long Barrows may also have been anthropomorphic or zoomorphic, perhaps referencing a deity of (re-)birth and cattle – or at least associated with the female form (as evidenced in Continental tombs), especially breasts – though we cannot discern whether such depictions were referring to a) the deceased (though where are the male images, in that case?) b) ancestral or other spirits or c) a divine figure, who may have been the same deity linked in myth to the Milky Way. The same imagery appears in passage grave art (Barclodiad y Gawres), though there is no (surviving) equivalent depictions in the henges. We are left with the evidence of cattle-symbolism that suggests a continuation of cult from the Long Barrow tradition. However, the possible stellar/galactic link between the henge banks/ditches and the sky is made not just by the alignments they focus on – but also by the material used in their building.

The materials used in henge construction suggest stellar qualities via colour and luminosity – they are common, of course, on chalk downland (such as at Avebury and Stonehenge), yet here one might argue their colour speaks of local geography, not choice – yet the same argument does not hold for other sites built in non-chalk areas where there seems to have been a deliberate attempt to emphasise the brightness of the banks. The most notable example is the gypsum used at Thornborough to lighten the henge; this was a local material but had to be quarried before being crushed and spread over the earthworks, giving the banks a shimmering glow. Such a deliberate act suggests that either they were trying to ape more southerly chalk henges, or that the whiteness itself was important to both locales.

A cursory look at the literature suggests this act is not uncommon and is therefore vested in some meaning.

6.22 Quartz and Gypsum

During excavations at Newgrange, O'Kelly (1982, p.68) discovered an apron of quartz around the front of the monument, which has been reconstructed as a revetment wall (Fig 238, left); detractors claim this wall could not have remained in place without concrete, so there is controversy over the drum-like shape of the reconstruction; the position of the kerbstones suggests there had been some collapse, yet it may have been the quartz, from the Wicklow mountains, had simply been scattered up the front sloping face of the monument. Excavations at

Knowth revealed a similar quartz skirt – but here the excavator believed the skirt to be *in situ* (Eogan 1973, p.69) (Fig 236, right).

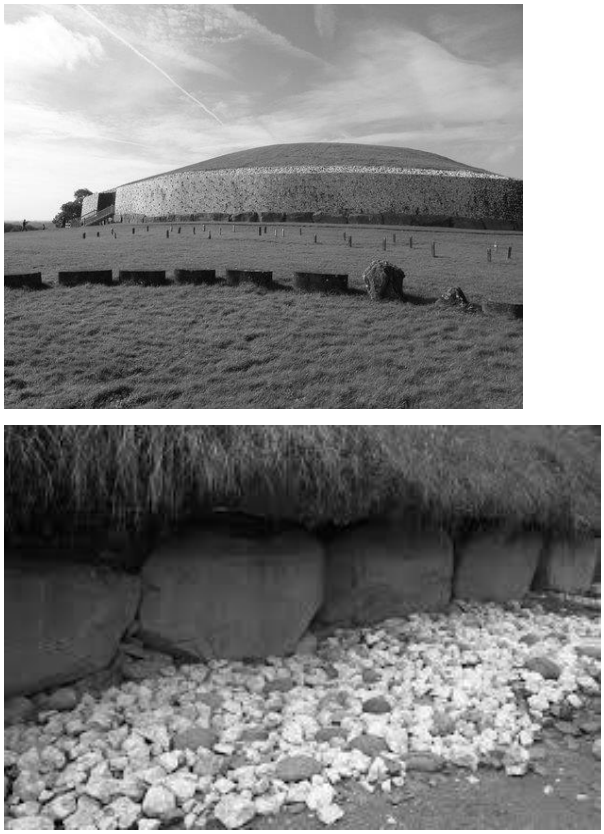


Figure 234, Quartz façade at Newgrange (left) and Knowth (right)

If this is so we are left with a monument with a semi-circular spread of white quartz not meant as a retaining wall, but as a scatter of white stone spread in front of the entrance as found during excavation. From the air this arc of quartz in reminiscent of the curve of the Milky Way (Fig 237, right) and would have been more so if the quartz apron had been less defined and more nebulous as the evidence at Knowth suggests (Fig 236, right). If it extended all the way around the mound, which is a distinct possibility, then the annular form would have suggested the entire galaxy as it ringed the horizon.

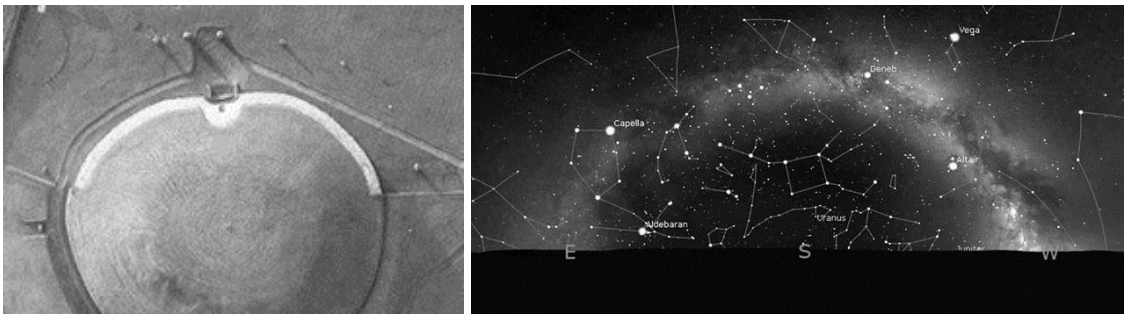


Figure 235. The quartz façade of Newgrange seen from the air resembles the curve of the Milky Way

What makes such an identification more likely is the nature of the stone: Quartz crystals emit light when rubbed vigorously together or when fractured – something only visible in low-light; this suggests (if such effects were one of the reasons for the use of this material) that the sites were visited or utilised at night – once again suggesting that it was the night sky that was of import to the builders.

Eliade records that in Australian aboriginal cultures Quartz crystals are believed to have fallen from the "vault of heaven. They are in a sense 'solidified light'...the quartz is connected with the sky world and with the rainbow" (Eliade 1967, p.177).

There are many sites that have evidence for the use of quartz; at Hendraburnick 'Quoit' 'the site appears to have become the focus for the smashing of quartz blocks, as well as for the deposition of mostly fragmented artefacts.' (Jones and Goskar 2017) while Darvill suggests the ritual use of quartz was a widespread Neolithic phenomenon (2002), something supported by Frances Lynch, who has examined in depth the use of coloured stone in prehistoric monuments (1998).

Hutton summarises the evidence, arguing for the prominence of quartz as a material associated with ritual structures, 'especially in tomb-shrines all around the Irish Sea' (Hutton 2013, p.155); that the material (after Darvill) was often found in or near water, may have been important – though we have seen in this thesis that water needn't be wholly terrestrial. At Bryn Celli Ddu not only was quartz used in the chamber of the monument, but the nearby river Braint is packed with natural quartz pebbles. Braint, as we have seen, is most probably a name derived from that of a Goddess, Brigantia, meaning 'High One' or even 'The One on high', and it is possible the river, with its light-emiting stones, was linked to the Milky Way and its quartz viewed as earthbound stars – one being the counterpart of the other. The milky colour of quartz crystals, like the gypsum and chalk used in henge banks, does suggest a link with the stars. Its use in ceremonial and funerary monuments suggests it was considered numinous (Cummings 2017). Might quartz's link to the celestial region, paired with its links to funerary tradition, suggest that there was a connection between stars and the dead – perhaps through a concept of the souls of the dead ascending skywards, as we find in Egyptian religion? (Von Dassow 1994, p.140)

The link between quartz and death is strong. For example, at Forteviot, near Perth, an early Bronze Age ruler was found 'buried on a bed of white quartz pebbles and birch bark' (SERF Project team 2010, p.20)'. Thompson has suggested such funerary rites involving quartz continued into the medieval period from the prehistoric (2004; 2005), while Lynch remarks:

> 'The placing of quartz and other white pebbles was a frequent occurrence in the Neolithic and Bronze Age ... The association between quartz or white pebbles and burial or 'sacred

places' seen even today in the white stones placed as 'votive offerings' wells and the many graves covered with white stone chippings modem graveyards.' (1999, p.17)

Curtis *et al* state:

'Quartz is also known from Beaker burials, featuring in significant quantities within the cist cemetery at Borrowstone, near Aberdeen. At Forglen House in Buchan, quartz-like pebbles and three Beakers were laid out in adherence to the typical arrangement of recumbent stone circles: with a rectangular 'pavement' (c.1.8m by 0.91m) in the location usually preserved for the south-western setting of a large recumbent stone and a line of quartz tracing the north-east/south-west alignment that forms such a major structuring principle of these stone circles.' (2010)

The same orientation is seen in a granite path found between Minions and the Hurlers stone circles in Cornwall, aligned NNE to SSW (Clarke 1935, p.134).

A cursory examination of this orientation suggests a continuation of the imagery detailed so far continuing in to the Bronze Age. The orientation is 192° between lowest 2 circles, which corresponds to the setting of Gacrux 1500BC, and 12°, the rising of Navi in Cassiopeia (Fig 238).

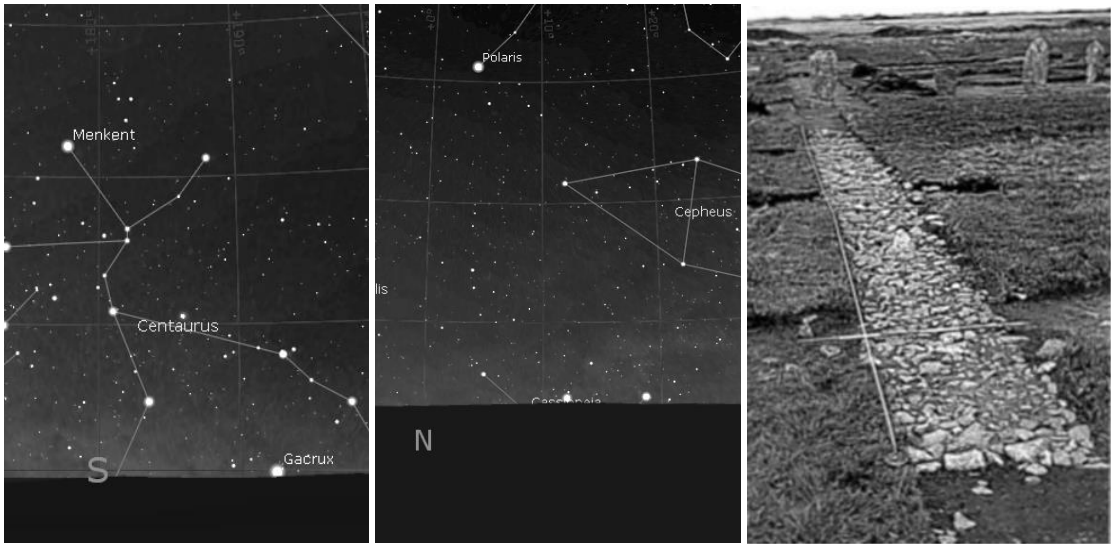


Figure 236. The alignment between the Hurlersand neighbouring Minions circle is marked by a stone path, and aligns on the Milky Way

The alignment of the most northerly two of the three henges references the same alignments but 200 years earlier, suggesting the monuments may have been built in series. Unfortunately, the many stone circles of the Early Bronze Age are beyond the remit of this thesis, but this brief aside suggests avenues of future research. The example here suggests clear evidence of a connection between sites and the Milky Way, and the practice of terrestrial stones being used to mirror the former.

Bergh has stated that 'the quartz can be seen as giving the dead the power to undertake the journey to the otherworld. Quartz, as the "stone of light", can also have symbolized life, an assurance of re-birth.' (1995, p.153). This may be going beyond the available evidence, but there is a clear connection between quartz, the dead, and the stars – though whether quartz had the same symbolism as found in certain worldwide shamanistic cultures, such as aboriginal Australia, is unknown (Eliade 1967; 1971). Links between quartz and healing, however, are suggested in Irish folklore, as well as a link between the stones and the fairies; it is certainly possible, then, that the stones were connected not only to a set of spiritual beliefs concerning the soul and the afterlife – a belief that may have referenced the stars, perhaps as a location for post-mortem existence, or the location of gods or ancestors – but that the stones may have played a role in the lives of the living, as talismans or conduits of spiritual/healing or power. This might suggest that the journey to the sky after death might not have been a one-way street, and that stellar powers or souls might have been able to be called back to earth. Perhaps the henges were places where this celestial or supra-normal power might be 'drawn down' to earth, for the benefit of mankind and the crops.

While the link between quartz and healing exists in the *Sidhe* (Irish fairy) tradition, similar symbolism may have been present in other stones – Darvill and Wainwright have emphasised the possible healing use of the Stonehenge bluestones (2009); such a tradition may have been similar to that discussed by Thompson for quartz, in which the stones and water (and imbibing of the drink) played a role– the bluestones distinctive patterning suggest to Darvill a 'a rockbound equivalent of the stars of the night sky, a Milky Way trapped in stone?' (Current Archaeology, October 2007). While the remark may have been made somewhat prosaically, the evidence from this thesis suggests this may have been exactly why these stones were chosen to be included at Stonehenge – in that they evoked stellar symbolism. Wayland-Barber discusses the power thought to belong to the ancestral spirits (especially of unmarried girls who had died before childbearing age) (2013, p.18)– and it may be that such sites linked to special stones were thought to be places where interface with the ancestral powers might be possible; and such powers might not just bring fertility but health. This may not have been their only role, or even a major role – but one of many.

The luminous aspects of quartz, and that of the white(ned) banks of henges, suggest that the form of the ritual monuments of the Neolithic were symbolic of the stars, perhaps the Milky Way especially; that the Milky Way was linked in mythology to a goddess associated with cattle is also born out in both an association between henges and cattle bones (especially skulls) that seems to continue a tradition found in the Long Barrows, and with the female form, as suggested in both megalithic art and more obviously in the funerary traditions of the Continent

where female imagery in tombs is proven. This linked imagery of cows/stars and females is suggestive of the Milky Way imagery found in myth even before the orientation of the entrances to the Milky Way has been taken in to account.

However, we must consider the possibility that skulls at entrances don't necessarily represent the head of cow but could equally signify the womb, the bucrania being linked to the latter. Likewise, skulls associated with Long Barrows such as Fussell's lodge or Beckhampton Road may be a reference to the womb as much as the head. The imagery of the sun rising between horns in Egyptian and Minoan imagery might, then, represent the new sun born from the womb, the open legs of the goddess. The complexity of horns/womb imagery suggests we had better not simply apply modern readings of horn symbolism (masculinity, power, virility) on to the entrance deposits at Stonehenge. Entrances are important at Stonehenge, but ambiguous: the cattle skulls found in their vicinity might mark them out as mouths or vulvas – as both entrances and exits. Yet we have also suggested a link between breasts and mountains – so that exits become even more complicated symbolically – breasts being the source of milk, and milk being tied in with the symbolism of dawn.

6.33 Dual Symbolism

We saw above how the form (circular), orientation (to the rising/setting of stars in the Milky Way), colour (white) and artefactual deposition (cattle remains, chalk spheres) of henges were all suggestive of cosmic/heavenly symbolism as also found expressed in the P-IE cosmogony.

Returning to this reconstructed myth it was noted how the cosmogony involved the separation of the original unity in the form of the earth and sky, or male and female. From this (separated and newly created horizon), then, the sun/dawn was seen to appear. The henges, passage-graves and Long Barrows, this thesis hypothesises, were embodiments of this cosmogonic drama, representing the place of death/rebirth of the sun on the horizon – i.e. where the Milky Way and the earth conjoined, so that to enter the henge was to enter the gates of the sky on the horizon.

This obsession with the moment of cleavage, or of the return to unity, finds its chief expression in the imagery of the double- or twin-hills or mountains from which, or behind which, the sun or stars rise and/or set. That Irish tradition refers to such hills as breasts (i.e. the Paps of Anu) or buttocks continues the anthropomorphic theme in which the very cosmos is human (or cow) shaped. One might argue that the twin-hills, which are potent symbols in Egypt and Minoan Crete, are a concise embodiment of a creative act – of duality appearing from unity – and that the two sides of the mountain are embodying the dual aspects of the created world. The appearance of such twin-hills may have been instrumental in the placing of ancient sites – such as the hills of Hoy in Orkney, or Tan and Milk Hill in Wiltshire, which are referenced by both

Marden henge and the Sanctuary. Where no hills were present, they were often built (Silbury/Gibb Barrow/Dunragit tumulus) but the very entrances of the henges provided a similar function - providing an open space between two curving 'hill-sides'.

This theory sheds some light on embodiments of dualistic symbolism in the design of sacred sites, especially the 'worked and unworked' or 'male and female' stones that flank the doorways of tombs or dolmens, such as the pairing of stones along the Avebury avenue and in the trilithons of Stonehenge (Fig 239). The space between these is where the sun will be viewed, or other 'horizon events.' They form a similar symbolic image to the twin-hills or mountains from which the sun is swallowed then released – which in Hindu myth is the Vala cave from which Uṣas, dawn, is freed:

15. Uṣas, as thou with light to day hast opened the twin doors of heaven,

So grant thou us a dwelling wide and free from foes. O Goddess, give us food with kine.

(Translation by Ralph T.H. Griffith HYMN XLVIII. Dawn.)

And which may have continued as a tradition until relatively recent times, as Grimm records 'Maidens clothed in white, who at Easter, at the season of returning spring, show themselves in clefts of the rock and on mountains, are suggestive of the ancient goddess.' (1882, p.291)

The twin-doors of heaven bring to mind both the twin-hills so integral to the henge tradition, but also the doorways formed at Stonehenge that Darvill has suggested embodied divine pairings, such as Apollo and Artemis. Here he is drawing on Classical myth, but a more apt comparison, given the date of Stonehenge, might be Nut and Geb – with the sun rising between them at creation. That 5 such inner-trilithons exist at Stonehenge may be important given the 5 epagomenal days granted to Nut to give birth to the gods. If such identification between the trilithons and cosmogonic figures or forces is correct then the twinned stones may represent the same duality as the twin-hills – and may refer to the separation of land and sky, or male and female. There is not space within the main body of this thesis to explore twin imagery and the medieval Stonehenge tradition, only to note that there is a connection between the site and the figure of Merlin, who is associated with a twin-sister, and whose alternative names (Emrys/Llallogan) may derive from an Old Celtic word for twin (Pughe 1832, p.262). The twin-doorways formed by the trilithons at Stonehenge form a gateway through which sunrise/sunset might be viewed, from which the first light of dawn might be seen; this echoes a description by Parmenides, who is said to have experienced a journey to the land of the dead, and on returning, being driven in the chariot of the daughters of the sun out of the house of night sees 'the gates of the paths of Night and day, kept apart by a lintel…' (West 2007, p.222). Interestingly, dawn (as a goddess) appears in some IE traditions between the black cow of night and the white cow of

day (*ibid* pp.222-3) and in the Ṛgveda, Uṣas, 'dawn' comes out of the 'cow pen of darkness' and bears her breast 'like a cow's udder'. Thus, the doorway represents that point between dualities, be they day and night or earth and sky, both of which can be connected with bovine symbolism – symbolism that may lie behind the deposition rituals around the ditches of henges. A further analysis of such paired stones (worked and unworked etc) is called for, though it lies beyond the scope of the present work.

Figure 237. (Above top left and right) 'female' and 'male' shaped flanking stones also exhibiting 'dark and light' symbolism at Wayland's smithy, whose original chamber was oriented towards the rising of the Southern Cross within the Milky Way. (Below left) similar contrasting worked and un-worked stones form the trilithon 'doorways' of Stonehenge and frame the horizon events of solsticial sunrise and sunset. (Bottom right) the avenue at Avebury shows a similar contrasted pairing.

Parmenides experienced his vision of the lintel above the gates of the paths of Night and day when in the land of the dead, and we must wonder whether such a journey was the fate of the Neolithic dead, who would be brought in to the monument for a post-mortem ceremony in the hope of stellar rebirth, such as wished by the Pharaohs of Egypt, who aimed to become stars through entering the body of Nut. But might such rites also have been enjoyed by the living, who wished to celebrate the rebirth of the sun and perhaps undergo an experience similar to the

initiates at Eleusis who also sought immortality through astronomically potent rites? At Balfarg henge in Fife analysis of grooved ware pots suggest they had contained some kind of hallucinogenic drink. The release of the sun and the release of soma are connected in Vedic tradition, just as at Eleusis the ritual *kykeon* was enjoyed by Demeter only after Baubo had revealed her nakedness to her. Ritual drinking, then, may have played a part in the rites practised here. If we recall that in Vedic ritual the milk of the dawn cows, the light of the dawning sun, was invoked sympathetically through the boiling of the milk in a cauldron; that Silbury Hill was said to have been raised in the time it took 'a posset of milk to boil', and that milk-lipid proteins were most commonly associated with ceremonially-used grooved-ware pottery at Durrington Walls (Craig *et al* 2015)– we begin to get a glimpse of the kind of rituals likely to have been performed in the Stonehenge environs – rites including dancing, drinking, sexual behaviour, sympathetic magical actions – and arguably the pouring of milk in to the nearby River Avon, if we recall in the Irish myth of Cú Roí that the pouring of milk into the river was a 'signal' given to Cúchulainn as an indication he could now enter the 'spinning' fort and rescue the magical cows. Such ritual actions would be timetabled by events in the night sky, by the 'dance' of the Milky Way, perhaps over many nights. The Milky Way, then, provided the time-keeping of the midwinter ceremony, while its heavenly peregrinations played out against a host of risings and settings of other heavenly bodies, both within and without its bounds, formed the backbone of the drama itself – the same drama of the night sky spelled out in myth.

Conclusion - The Road of Souls

In Part One it was argued that the apparent dearth of mythology with which to help 'explain' the ceremonial sites of Neolithic Britain and Ireland was somewhat illusory, as IE myths showed, on closer analysis, a preoccupation with Neolithic themes; indeed, the reconstructed P-IE mythology put forward in this thesis shows a clear agricultural pedigree, with obvious similarities to extant Near Eastern mythologies, suggesting a possible Near Eastern derivation, carried westwards into Europe from Anatolia with the advent of farming. While this does not necessarily imply the IE *languages* originated in the Near East (though it doesn't negate this idea, either), it does suggest that elements of P-IE *culture* were thus derived, perhaps assimilated along with farming techniques borrowed from neighbouring cultures, such as the Cucuteni-Trypillia, if the current identification of the P-IE peoples with the Yamnaya culture is correct. Either way, the reconstructed P-IE myths show a preoccupation with astronomical symbolism, with a cosmogony involving the separation of earth and sky (linked to a god and goddess), and with the return/rebirth of the sun as a dominant theme – an occurrence that was seen as involving the constellation of Orion, whose rising with the sun on certain important seasonal dates qualified it for such a 'sun-bearing/rescuing' role in the period during which the myths were formulated. Yet the role of the sun was just one part of a greater drama involving the movements of the heavenly bodies, most dramatically that of the Milky Way, which the mythology suggests was female-formed and associated with both waters and cattle.

Moving on to an analysis of the orientations of British and Irish ceremonial sites, the results presented in this thesis suggest there existed two main orientation types in the 55 sites used as a sample study group, namely 'Crux/Cassiopeia' sites and 'Orion' sites; of the former, which make up the majority of Class I and II henges, there were, again, two types – those aligned to the rising of Crux and/or setting of Cassiopeia (NW-SE) , and those aligned to the setting of Crux and/or the rising of Cassiopeia (NE-SW); likewise, the 'Orion' sites can be subdivided

into two types – sites aligned on the rising and setting of the stars of Orion, and sites aligned to what we have termed the 'Orion Point', that is the position of the sun-rise in early May in the outstretched hand of Orion within the Milky Way.

The sites that were aligned NW-SE had two reference points: a) the rising and setting points of the Milky Way, visible in this position shortly after the rising of Orion from September to early February; and b) the rising point of stars in Crux in the SE, at the same moment as the stars in Cassiopeia set in the NW a few hours after the rising of Sirius (though in many cases high ground to the north of the site defined, rather than the *setting* of Cassiopeia, the sighting of one or more of its stars traversing the northern horizon before rising into the sky again). At the moment of the rising of Crux, the Milky Way ringed the entire horizon, seeming to lie flat upon the earth.

The rising and setting of Crux, as a visible (i.e. nightly) phenomenon, occurred from the start of December to the start of April – later than this its rising or setting was obscured by daylight. Such an alignment, then, suggest a possible winter and spring observation. Both phenomena, the position of the Milky Way lining up with the henge entrances, followed by stars in Crux and Cassiopeia doing the same, were, then, visible in December to early February, suggesting these events formed part of a winter ceremony (or ceremonies). Similarly, sites that aligned on the setting of Crux and rising of Cassiopeia did so at the moment the Milky Way was arching above the eastern horizon, and viewable through the same entrances - but such setting was not visible after mid-May and before early December. This, again, suggests alignments operative in winter. The correspondence between the dates of both paired site types, then, suggests they may have formed part of the same ritual process, but one emphasising a point towards the end of, and the other the beginning of, a winter ritual based on a celestial 'drama' that traced the changing patterns of the heavens over an entire night (arguably the winter solstice). To be noted is the fact that the situation was slightly different in sites in Orkney where Crux was no longer visible. Instead we see alignments on the star Sirius, which had taken on the former position of Crux at the rising point of the midwinter sun.

The second site-orientation type focused on the rising and setting of stars in the constellation of Orion or that of the Orion Point. The setting of Orion occurred visibly from November to March, while its rising was visible in the night sky from July to December and was last seen around the solstice (c. 2500 BC). This suggests November – late December as the most likely observation date if both rising and setting were to be witnessed on the same night – which fits in with the suggested midwinter observation date of the Milky Way alignments. The Orion Point alignment, however, occurred on or around May Day, and although like previous alignments it

referenced the Milky Way, the date of this alignment suggests a differing ritual process, reflected in the existence of stand-alone sites that referenced this phenomenon.

The preoccupation at ceremonial sites with the Milky Way and Orion and the solsticial extremes of the sun all become explicable in light of the reconstructed P-IE myth put forward in this thesis, allowing a hypothetical identification to be put forward between the constellation of Orion and the 'sun-bearer' of myth (the Dagdae of Irish tradition with 'three stones' in his belt) and between the Milky Way and the riparian cow-goddess (the goddess Bóand of Irish tradition), whose lewd display evidenced in versions as far apart as Egypt and Japan, was instrumental in causing the sun to be released from its winter prison – an identification that is arguably supported in the depictions of the female form from the Balkans to Britain that bear designs reminiscent of the star patterns involved in the proposed alignments, namely the vulva/lozenge of Crux and the breasts or 'W' shape of Cassiopeia, as well as a wealth of cattle symbolism, reflected archaeologically in the deposition of faunal remains at the ceremonial sites in question, and whose depositional patterning remained constant from the fourth into the third millennium despite a change during this period from linear to circular monuments, whose shared symbolism such deposits seem to indicate.

*

The Neolithic cosmology suggested by the reconstructed P-IE myth presents a view of the cosmos created through the separation of a sky-goddess and an earth god in a cosmogonical process that might be repeated both seasonally and daily in the release/re-birth of the sun. The (re)birth of the sun was an act closely linked to this goddess who bore rich bovine and riparian characteristics, and who appears in the myths as the progenitor of both earthly and heavenly waters. Indeed, the creation of both rivers and the Milky Way (the celestial equivalent of the earthly waters) was the definitive act of the goddess, who was seen to embody, or be present in, both. That the henges appear to be oriented on both earthly and celestial rivers, at the moment the two are in alignment, suggests they are referencing both this divine figure and the creative act itself. If we recall the myth of Cu Roi in which the feminine powers (Blathnat, cows and cauldron) are 'released' from captivity from within a spinning fort constructed of standing stones after the 'signal' provided by the appearance of the milky river, it suggests a connection between ritual site, heavenly and earthly waters and the moment of creative release. While some henge sites do, indeed, have rivers running through them (such as Marden), what the results of this thesis suggest is that what is being referred to in this tale is the 'heavenly' 'milky' river that runs through the henges – in that the entrances align on the rising and setting points of this celestial feature (and/or the entire henge bank aligns on the galaxy ringing the horizon); and that this alignment somehow was connected to, or brought about, some kind of creative release or a

return to the conditions of the cosmogony. This single facet of the sites, their orientation to the Milky Way, then, is integral to their function, linking them, as it does, to a wider realm of symbolism uncovered in the myths, to which the faunal and other artefactual features associated with such sites and passage graves can also be seen to refer.

Moreover, if the Neolithic cosmology concerning the Milky Way resembled that found in Ancient Egyptian tradition then the Milky Way may have been seen as a kind of 'road of souls' by which the spirits of the dead travelled to be reborn in the celestial realm. Such an idea has currency in many ancient and pre-modern societies (Lebeuf 1996; Harris 2012), and is perhaps best expressed in literature in Cicero's 'Dream of Scipio' where in a fictional dream-vision Scipio meets his ancestors along the Milky Way – the route to the celestial Elysian fields (Harris, 2012, p.278) (Fig 240), and is told that:

> those who have now lived their lives and released from their bodies dwell in that place which you can see,"— now that place was a circle conspicuous among the fires of heaven by the surpassing whiteness of its glowing light—"which place you mortals, as you have learned from the Greeks, call the Milky Way." Cicero, The Dream of Scipio - Somnium Scipionis (1883) pp.3-14. [Translated by W. D. Pearman]

The concept of the Milky Way as a Road of Souls is especially prevalent in the New World. In Inca myth the galaxy was both the path of the dead but also the path taken by the soul in sleep (De la Vega 1990, pp.84–86). Curtis recorded beliefs in the Milky Way as a road of the souls in the traditions of many Native American tribes, including the Apache (1907), Cheyenne (1911) and Shoshone (1921), while Simmonds recorded a vision experienced by a Seneca man named Handsome Lake in 1799 of a journey on the "the Great Sky Road" (the Milky Way) accompanied by a spirit guide (Wallace 1972, p.245):

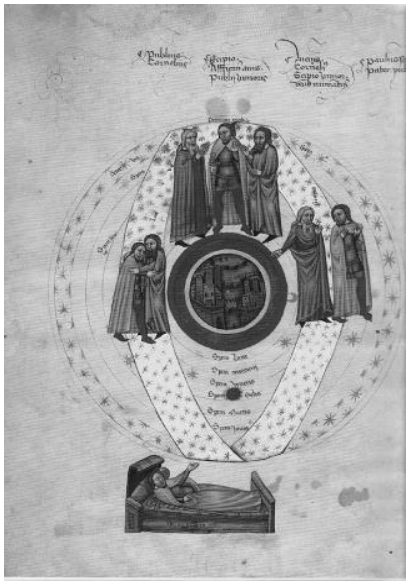


Figure 238. Cicero dreams of meeting his ancestors in the Milky Circle, from Macrobius, Commentary Dream of Scipio, Bologna c.1383, Lat. 256, fol. Iv, Oxford, Bodleian Library

> "Suddenly as they looked, a road [the Milky Way] slowly descended from the south sky and came to where they were standing. Now there upon he saw the...tracks of the human race going in one direction [the individual stars] were all different sizes from small to great. This road, which they soon were treading themselves, was the path by which human souls ascended into the afterworld. On it could be observed, in various situations, many different types of people striving heavenward, and from its vantage point a vast panorama of the human scene could be observed." (*ibid*, p.243).

Similarly, one might suggest in Neolithic Britain the spirits of the dead or of the ancestors might have been believed to have risen to the sky along this 'path of the white cow' (to give it its Irish name) at certain times of the year, i.e. when the entrances of the henges aligned to the Milky Way allowing ingress within the body of the celestial mother cow. The entrance, then, would have formed a kind of 'stargate' through which the souls of the dead might pass, and thus become an ever-living soul in the firmament, through journeying through the body of the Milky-Way goddess, as was believed in Egypt. Silva, speaking of stellar alignments in Portuguese dolmens, states that these stars 'could be conceptualized as the land of the dead in the celestial skyscape, or as the conduit to such a land.' (2015, p.136), and that equally such conduits might have been important to the living in 'vision quests' that may have taken place in the chambers of the tombs. The entrances might also have framed the *setting* of the Milky Way and thus have been thought of as a place where the souls, ancestral, godly or otherwise, came down from the sky to the earth (just as the Milky Way goddess ringing the horizon returned to, and joined with, the earth in a manner evocative of the unity that preceded the cosmogony); thus, making the henge a place of birth/rebirth from the cosmic/galactic mother. Here the idea of a henge as a kind of 'air-lock' makes sense, insulating from the outside some kind of numinous power held within. The image that springs to mind is the Biblical imagery of Jacob's Ladder at Bethel, a place where angelic influence went back and forth from the celestial realm. It was, perhaps, a place of intercourse between the living and the dead, or the immortal realm and the mortal, a two-way street to the cosmos. Such interactions require specialist locations, different from those of the profane world; locations that suggest liminality or transcendental qualities, expressed symbolically through features such as astronomical alignments that might point to a mythical 'time' by analogy, (i.e., the 'stopping' of the sun at the solstice to suggest a stopping of time, or a time *before* time); or the alignment with nearby bodies of water to suggest an earth-sky unity reminiscent of the state of the cosmos before the separation of earth and sky; but also through features such as reversed-boundaries of 'outer ditch, inner bank' suggesting non-ordinary, or inverted, space (or even non-space). The placing of sites in certain locations in the landscape, or the monumental form of the sites themselves might also have helped evoke the sense of the numinous (Otto 1923, pp.5–31), be that evoked by geographic setting (such as at Yeavering) or through the grandeur of the architecture employed in the construction of the site (the size of the Stonehenge trilithons, for instance, or the ditch and bank at Avebury), as well as through effects

now lost to us, such as the manipulation of sound (Devereux 2001), darkness, flickering lights/firelight – not to mention that such feelings of awe or otherworldliness might be enhanced through the taking of intoxicants, through dance, rhythmic sounds or after periods of fast or sleep deprivation – all perhaps aiding a 'vision quest' such as posited by Silva (2015, p.136).

Arguably, such sites may have sought to express the idea of a 'timeless', ideal state – that is they were built to reflect the conditions of the *illo tempore* (Eliade 1971, p.4) – as has been suggested for ritual centres in the Near East, allowing access to the powers inherent in the act of creation itself, and access to divine energies, which may have been seen to creatively 'pour' out of such sites.

We must be ever aware, then, that a three-dimensional ritual site, as it survives in the present, may have referenced, in the past, further dimensions that are less obvious or lost to us today – a connection to 'mythical' time and place – or to some idealized celestial realm - which is easy to overlook but that may have been fundamental to the original purpose of the sites. Such an evocation of 'mythical time/space' within the sacred enclosure is suggested in the Celtic word for a sacred site, '*nemeton*', which contains the element *nem* that is used in later times to translate the word 'heaven' into Welsh (*nef*) and stems from the PIE ***nebh* – sky (which also yields *nimbus*, cloud). A *nemeton*, then, was 'heaven on earth' – where the divine, timeless, transcendental realm was accessible to both the living (in dreams/visions/ritual states) and the dead. This heavenly symbolism is noted by Gaster, who writes:

> …earthly cities, temples or religious institutions have their duplicates in some other, transcendental sphere, often identified with the heavens.

And that:

> The ancient Egyptians, for instance, believed that the *nomes*, or administrative division, of their country matched the several "fields (i.e., territories) of the gods", on high and that many of their temples had been built on a pattern laid down by the gods. The Mesopotamians had a similar belief. A text discovered at Ashur, the old capital of Assyria, states, for example, that Esagila, the famous temple of Marduk, in Babylon, corresponds to an edifice erected by the gods in heaven, while an inscription of Gudea, the governor of Lagash (c.2250 BC), relates how he beheld in a dream the goddess Nisaba holding a tablet on which were depicted "the holy stars of the building of the temple", and how the goddess was accompanied by a god who proffered a "blue-print" of it. (1984, pp.117–8)

Nineveh, for instance, was said to be built to a pattern 'delineated from distant ages by the writing of the heaven-of-stars' (Eliade 1971, p.8), and seen as the earthly counterpart to Ursa Major. Such heavenly symbolism, as already noted, was referenced in the siting and performance of the Egyptian *Heb Sed*, and we have already noted how Newgrange as 'womb of the white cow' seems an earthly analogue to the Milky Way both nominally and in its design. Likewise, the henges may have been places for such two-way traffic between man and a

spiritual realm and formed in the shape of a celestial counterpart – i.e. the Milky Way – circular, white, glistening, referencing cattle and the female form.

This place where numinous power might be gathered would suggest they might have had multiple purposes – as places where the dead might 'ascend' to the stars, but also where divine influence became focused or channeled on earth, and utilized in ritual procedures, such as healing and divination, such as occurred at Delphi in Greek tradition.

This posited connection between henges and the dead is based on the correspondence between the symbolism of the earlier Long-Barrows and that of the later circular monuments as outlined in section 5.3. It does not imply, however, that this was their sole *raison d'être*, nor that they were places of burial (though there certainly is some connection, such as the cremations present in the early phases of Stonehenge); the fate of the remains of the majority of the dead during the Late Neolithic is not known. It has been suggested (Healy 2012; Cummings 2017) that they were deposited in rivers;

> Since most people were not formally buried they could well have been disposed of in watery places (rivers or the sea…). Water… might …have been a powerful symbolic substance associated with the transformation of state from living to dead (Bradley 2012) or associated with the journeys of the ancestors.' (Cummings 2017, p.224)

in which case the structuring of sites that indicated through the position of their entrances the moment the Milky Way aligned with the local river might suggest a rite or rites in which the link between the earthly and heavenly waters enabled some kind of transformative process or exchange between the realms – perhaps pertaining to the transformation of the dead placed in earthly waters to the celestial realm.

The traditional image of the henge as a place of gathering, then, may belie a reality in which the henge was a place of power to be avoided except at certain times of the year, perhaps when the specific position of the sun or the celestial river marked its entrances as 'open', or in other, exceptional, circumstances. Of interest, given this possible 'avoidance', is an interview that took place with the 'curator' of Newgrange, a lady in her 90s named Anne Hickey, during the excavation of the site by O'Kelly in the early 1960s (http://www.rte.ie/archives/2017/0727/893320-new-discoveries-at-newgrange/). Mrs. Hickey described how the site was for the most part avoided by the old folk, them being 'terrified' of fairies, although some old ceremony involving walking round the stones was recalled. This might be seen as a recent attitude towards such sites, yet equally it might have reflected an original relationship. The fairies referred to in Irish tradition are the Tuatha de Danann, that is the 'gods', yet their relocation to the 'hills' (burial mounds) after the coming of the Gaels suggests they may have, at least in part, have represented an earlier population associated with the burial mounds. Many have suggested that fairy tradition stems from an old association with

the dead (Spence 1948, p.310) so such fairy lore may reflect an older belief that these old ceremonial sites were associated with the spirits of the dead and that they were to be, for the most part, avoided. Might these sites have been used, if not for burial, then perhaps excarnation, where the souls would separate from the bodies before the bodies were then placed elsewhere, perhaps deposited in the nearby rivers? This would suggest a function taken over from the previous Long Barrows and communal burial places.

The henge, then, may have been a place for the souls of the dead, ancestors or gods, and not normally for mortals unless requiring the help of these spirits. Certain times of the year may have seen rituals that involved the living, perhaps drawing on the numinous, cosmogonic power associated with such places – perhaps for rituals of healing or rites of passage. The Orion point sites, however, suggest a different ritual time and perhaps use. Durrington Walls, associated with the living by Parker-Pearson, aligns on Orion. It would be interesting to see if artefactual remains at Orion Point sites suggest any difference in ritual observance than those aligned on the Milky Way at winter.

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What impulse lay behind the creation of the henge phenomenon? One might argue that the inspiration for the building of the henges lay in the changing skies that Neolithic man was presented with when reaching Orkney, the postulated starting point of the building tradition. Here, farmers travelling from the south had reached the furthest landward expansion in the British Isles and had found three important changes occurring in the heavens:

1) Crux, associated, as argued above, with the womb of the Milky-Way goddess, was no longer visible. This group of stars had once risen in the same part of the sky has the midwinter sun (c. 7000 BC) but from Orkney this was not seen above the horizon after c. 4000BC.

2) The constellation of Cassiopeia, perhaps associated with the breasts of the goddess, that had formerly been seen to set below the horizon, now remained above it.

3) The Milky Way, formerly a linear band across the sky, now became visible as a ring circling the entire horizon. Thus, a linear feature had become circular. This parallels the change of burial monuments from linear (Long Barrows) to circular (passage graves) and it is possible the henge, as a circular feature, was meant to suggest the encircling galaxy.

Whether such a tradition developed naturally out of the preceding burial traditions can never be known. But given the birth of the tradition in Orkney under such a dramatically changing sky, and the association between henges and Grooved ware, the contents of which may have had a pharmacological component suggesting a use as an intoxicant or psychedelic substance, it may have arisen as a single idea, maybe visionary, in the mind of an individual or individuals – though, if this was the case, it clearly did not spring *ex nihilo*. One is reminded of the Ghost Dance religion that swept through the indigenous inhabitants of the American West in the 1800s that was the idea of a single man, a Nevadan Paiute named Wovoka, based on a vision he had had during a solar eclipse in 1889; the religion promulgated the idea that if one performed a circular dance (of 5 days duration) the souls of the dead Natives would return to the land and repopulate the country near destroyed by the White Man. The original Paiute term was 'Dance in a circle' the later form, 'Ghost Dance', being the Lakota name for the rite (Mooney 1896).

Perhaps the henges, often seen as ritual spaces for the living, might equally have been shared with, or used exclusively by, the spirits of the dead – and may even have been specially created dancing grounds for the departed, 'insulated' from the outside world. The alignments, so meticulously planned, may never, like the solstice phenomenon in the passage-graves, have been meant to have been seen by living eyes. Ultimately, then, speculation concerned with the exact viewpoints of alignments or how many people might have been able to fit within the henge to view them (and the associated conclusions drawn from them concerning ideas of privilege, social stratification, and the restriction of the henge to the entitled few) may be irrelevant. However, enough evidence survives to suggest at least some use – within certain delineated areas of the sites, at least.

The henge may have been the place where the earth and the heavens met, and to enter it, when the heavens signalled it was apposite to do so, was to step out of ordinary place and time, perhaps to step back to the point of creation and be renewed. Alternatively, as later fairy folklore makes clear, perhaps to step within the 'fairy-ring' was to risk being 'taken' or being driven mad – though it might have been to return with a gift, such as second-sight. Such places may, then, have been the reserve of the dead or the 'shaman', who could traverse both earthly and celestial realms. We have no way of knowing whether the divinity whose face peers at us enigmatically from the puzzling carvings at Barclodiad y Gawres or from the Folkton Drums elicited love or fear from those that carved them; but in contrast to the terror evoked in Anne Hickey's contemporaries, the descriptions in Irish myth concerning the *Tuatha Dé Danann* portray them as powerful beings who might also be benevolent to mortals, if treated with respect. Such beings seem to blur the boundaries between the dead, the ancestors and the gods;

their dwelling places were believed to have been the very ceremonial sites dealt with in this thesis; and although the Lebor Gabála Érenn states:

> the truth was not known beneath the sky of stars,
>
> whether they were of heaven or of earth

they are said to have arrived on earth on the mountain tops, having descended from the sky - a fitting place of origin given the conclusions drawn from this study.

Finis

…

Postscript

On a personal note, it was an experience of viewing the Milky Way in an unpolluted sky in Yosemite National Park in the late 1990s that revealed to me of the dramatic nature of this phenomenon, and it was this, in tandem with a growing interest in Milky Way imagery in myth (especially Celtic and Germanic), which led me to wonder whether it had played a more prominent role in European Prehistoric worldviews, as it had in New World cultures (something I had come to more fully appreciate when teaching a beginners' course in archaeoastronomy at the University of Kent in 2011).

Furthermore, I had been aware that over the previous couple of decades since completing my Masters in Celtic myth, that the posited date of the arrival of Celtic languages in Britain had been pushed further and further back. It was this re-dating that had led to an interest in Renfrew's Anatolian hypothesis, which suggested the possibility that if the Proto-Indo-European culture had itself been Neolithic then motifs/imagery from this era might have been passed down to later Indo-European myths. Such possible older elements in the myths had always interested me, especially where they had seemed to refer to pre-Celtic ritual sites (such as the Irish myths surrounding Newgrange). I realised that possible astronomical imagery in such myths, which I had been independently researching for some time, might be a key to resolving this debate, since such myths might record (datable) changes in the night sky brought about by precession. It had originally been my intention to argue in support of Renfrew's Anatolian hypothesis, but further research during the writing of this thesis suggested that the more mainstream view (the so-called 'Kurgan' hypothesis of Gimbutas and others) was becoming increasingly secure through being supported by genetic studies (although far from being proven). However, my analysis of the myths did suggest a clear Neolithic origin of many motifs and elements; and while it lies beyond my expertise to consider the implications of this on the whole IE language/dispersal question, it does at least suggest Renfrew's hypothesis is not to be so readily discarded, as it presents one mechanism (albeit among others) by which Neolithic elements came to be present in Indo-European myth, something that the alternative models have yet to factor in.

Regarding alignments to the Milky Way during the Neolithic, the number of sites aligning on this phenomenon has been genuinely surprising. I had begun by examining basic alignments

with the Milky Way as a whole, before discovering a preponderance of alignments on Crux – something I then found mentioned by Mann (2011), though his reconstructed cosmology differs from mine in many respects. I had wished to escape the charge of 'cherry-picking' my sites by including those which I thought would counter the thesis, such as the 'solar' Bryn Celli Ddu and Woodhenge, only to find both sites had internal stone settings that supported the thesis – and this was repeated, again and again, with each new site studied seeming to confirm the schema, especially when I began to factor in Cassiopeia alignments. The suggestion of 'Orion Point' orientations has been of interest – not just from the point of view of a possible origin of later May Day celebrations, but also from the alternative vista of the orientation as a relic of an earlier spring (or even winter) phenomenon, which showed an ongoing interest in a stellar pattern that had hitherto only been suggested in myth (the 'carrying' of the sun by Orion). The material found within the myths was fascinating; that presented here represents the tip of the iceberg, with a further 70,000 words having been written but which did not make the final edit, but which I can hopefully draw on in future research.

Regarding future research, the Milky Way orientation hypothesis put forward in this thesis suggests a number of future avenues of exploration – and it would be of interest to pursue this theme further by looking at the settings of later stone and timber circles (as I did for the Hurlers within this text); and to fathom to what extent such stellar symbolism might have been carried on through the Beaker period – or whether it was, perhaps, replaced/obscured by solar orientations, as suggested at Stonehenge. It would also be of interest to look in more detail at cattle remains and evidence of bovine products in henges and other ritual contexts, to see to what extent the patterns uncovered at Stonehenge and Woodhenge occur in other regions besides Wessex - and to look more closely at megalithic art for astronomical patterns. But for now, this thesis presents the best answer I can give at present to two questions posed by Irish myth when I first encountered it three decades ago: why did Cu Roi's fort revolve like a mill-wheel – and why did Blathnat pour milk into the river when she was ready to be rescued from it? The answer to both, I believe, lies in the skyscape.

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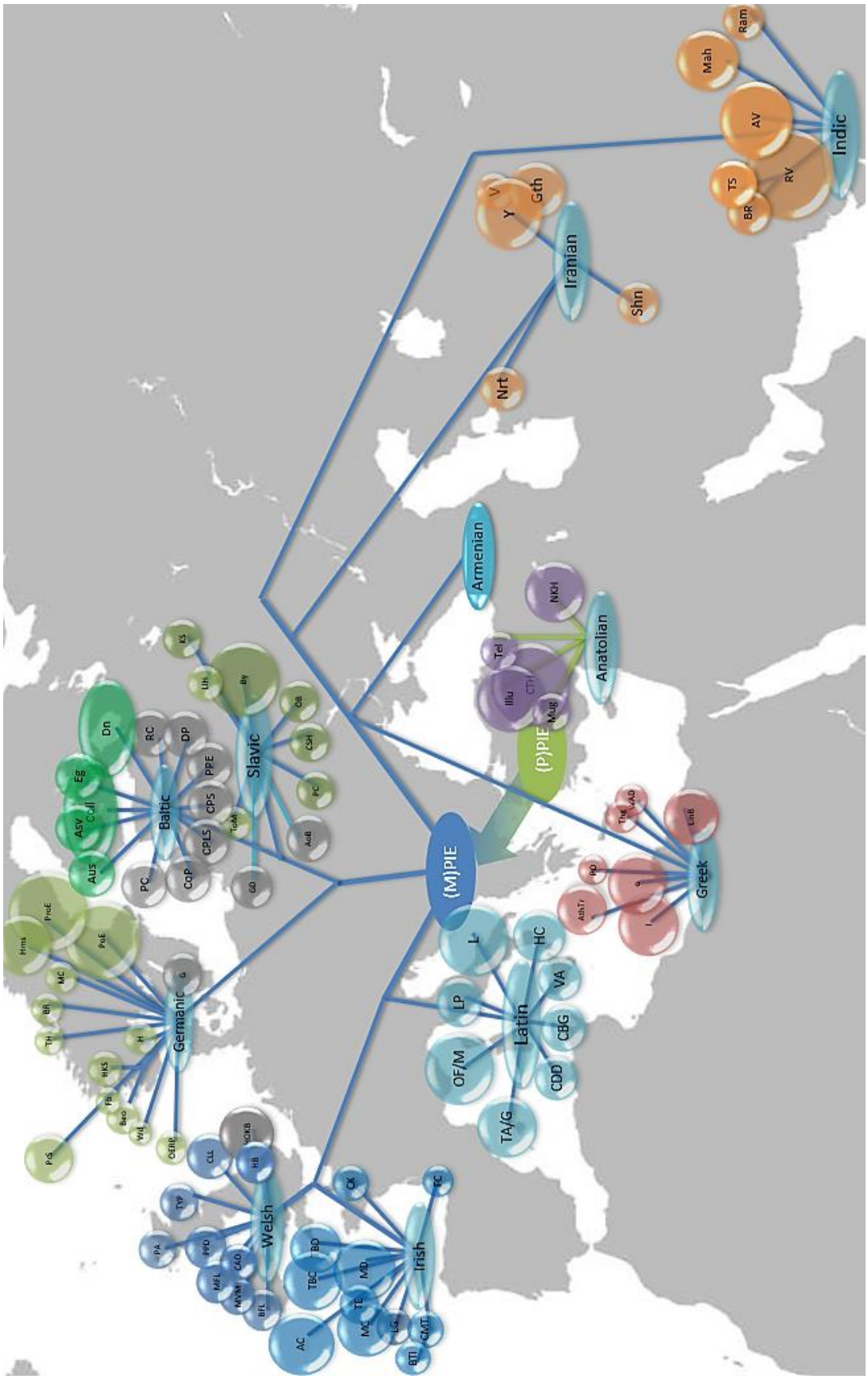
Appendix 1. Dendrograph of Indo-European Literature



Key:

Q Celtic:

MC Mythological cycle (8th to 12th Century)

CMT Cath Tánaiste Maige Tuired 'Second battle of Moytura'

LG Lebor Gabála Érenn 'Book of the Invasions of Ireland'

MD Metrical Dindshenchas (12th century)

TE Tochmarc Étaíne 'The wooing of Étaíne'

TBC Táin Bó Cúailnge 'The Cattle Raid of Cooley' (9th-11th Century)

TBD Togail Bruidne Dá Derga 'The Destruction of Dá Derga's Hostel'

CK Cycle of Kings

FC Fenian Cycle

BTI Balor of Tory Island

AC Aided Chon Roi 'The Death of CuRoi'

P Celtic:

HB Historia Brittonum

CAO Culhwch ac Olwen

PPD Pwyll Pendefig Dyfed (Pwyll lord of Dyfed)

BFL Branwen ferch Llŷr (Branwen daughter of Llŷr)

MFL Manawydan fab Llŷr (Manawyddan son of Llŷr)

MVM Math fab Mathonwy (Math son of Mathonwy)

TYP Trioedd Ynys Prydein(The Triads of the Island of Britain)

CLL Cyfranc Lludd and Llefelys (the tale of Lludd and Llefelys)

PA Preiddeu Annwfn (The Spoils of the Otherworld/Abyss)

Germanic

G Germania

H Hildebrandslied

HKS Hrolfkrakisaga (Saga of Hrolf Kraki)

Beo Beowulf

Wd Waldhere (fragment)

Fb Finnsburh (fragment)

OERP Old English Rune Poem

PoE Poetic (Elder) Edda

TH Thiodolf's Haustlǫng

BR Bragi's Ragnarsdrápa

MC Old High German Meresburg charms

PrE Prose Edda of Snorri Sturlusson

Hms Heimskringla of Snorri Sturlusson

PrS Prose sagas (from Flateyjarbók)

Italic:

CDD Cicero De Divinationae 106-43 AD

CBG Caesar Bello Gallico (Gallic Wars) 100 – 44 BC

VA Vergil Aeneid 70 – 19 BC

HC Horace Carmina 65-8 BC

L Livy 59 BC – 17 AD

OF/M Ovid OF fasti OM Metamorphosis 43 BC – 17 AD

LP Lucan Pharsalia 39-65 AD

TA/G Tacitus Agricola/Annals and Germania 56-117

Baltic:

PPE 1458 Europa Pope Pius II (Latin) ch 26

CoP Chronicle of Prussia (1326) (Latin) Petrus von Dusberg

PC Polish Chronicle (in Latin) 1460 Jan Długosz

Antiquarian quasi-history in 16th century

CPLS Maciej Stryjkowski (1547–1593) was a Polish–Lithuanian historian and author of Chronicle of Poland, Lithuania, Samogitia and all Russia.

RC Prussian Chronicle 1520 (in German) Simon Grunau

DP Deliciae Prussicae (1690) Matthias Praetorius

CPS Martynas Mažvydas in his Latin introduction to Catechismusa Prasty Szadei (1547) urged the people to abandon their pagan ways and mentioned the following gods

Aus Tales of Aušrinė

Asv tales of the Ašvieniai

Eg Eglė the Queen of Serpents

Dainas (folk songs) 19th century onwards

Slavic:

TM Thietmar of Meresburg (ca. 1015)

AoB Adam of Bremen (ca. 1075)

CSH Chronica Slavorum of Helmold (ca. 1170)

OB 3 x biographies of Otto of Bamberg (ca. 1150)

GD Gesta Danorum of Saxo (book 14)

(Russia)

PC Primary (Nestor's) Chronicle (up to 1110)

LIH Lay of Igor's Host (1187)

KS Knytlinga Saga (ca. 1265)

By Bylína

Greek:

LinB Linear B

I Iliad

O Odyssey

Thg Hesiod Theogony

WAD Hesiod Works and Days

PO Pindar Odes

AthTr Athenian tragedicians

Anatolian:

NKH New Kingdom Hieroglyphs

CTH Catalogue des Textes Hittites - Mythological Texts (CTH 321-370)

Mug Mugawar

Tel Telipinu

Illu Illuyanka

Iranian:

Y Yasna (includes Avesta)

V Vidēvdāt or Vendidād (8^{th}-4^{th} centuries BC)

Gth Gāthās c.1000 BC – 6th century BC

Shn Shāh-nāma of Firdawsi (c. 975-1010AD)

Nrt Tales of the Narts (Medieval)

Indic

RV Rig Veda 1500-1000 BC books 2-7 being the oldest

AV Atharvavada overlaps with later Rig Veda (repeats some material, but more 'magically' oriented) in 2 recensions; 581 hymns of Śaunaka school and Paippalādas (not all translated)

TS Taittirīya Saṃhitā

BR Bṛhaddevatā index of deities in the Rig Veda

Mah Mahābhārata

Ram Rāmāyaṇa (great epics, composed c.400 BC-400 AD

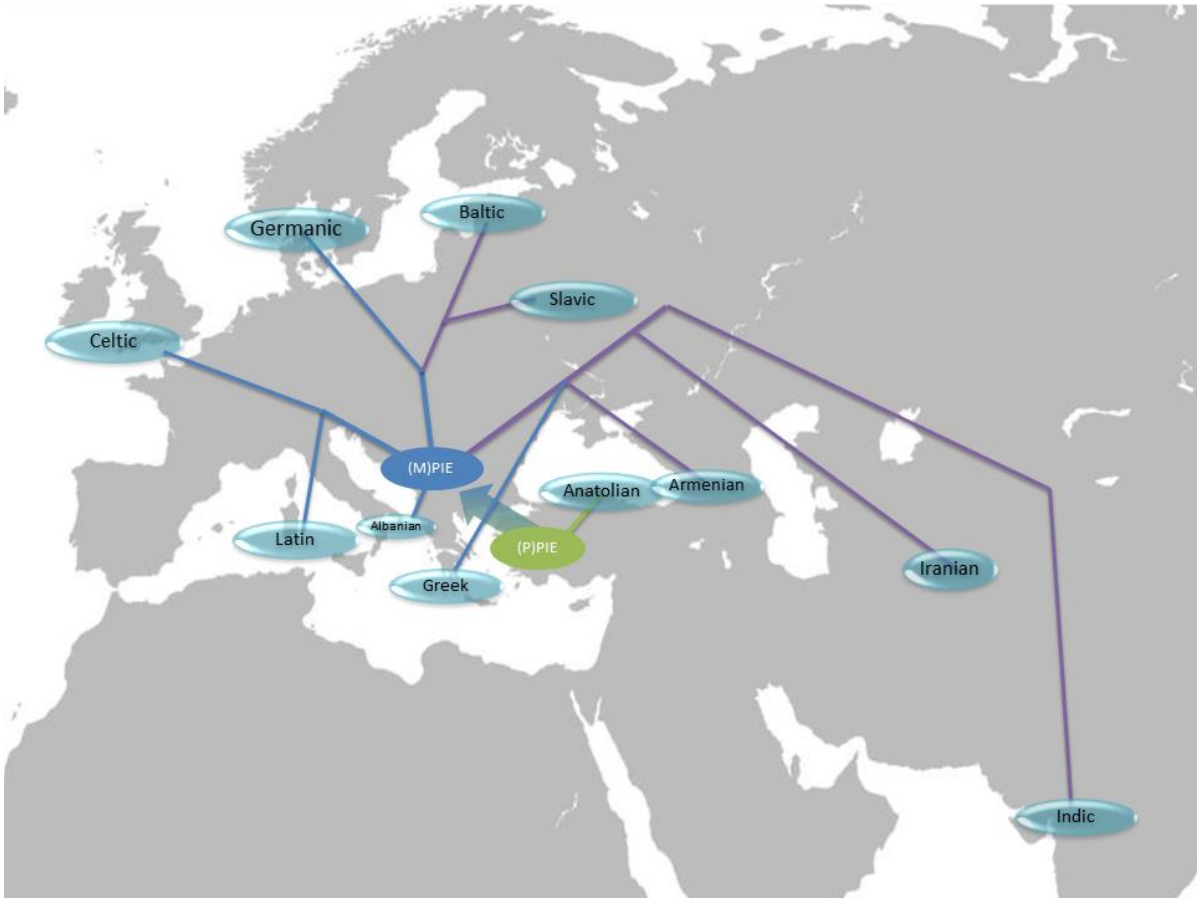
(Sources: Forston 2010; West 2007 pp.12–19)

Note the Design of the Dendrograph

On the dendrograph the earliest text for each language group is located more closest to the name of the group, with later flowerings and versions appended more peripheral to this. The size of each 'bubble' is indicative of the importance of a given source to the mythologist (or to this study); of course, in all cases the true centre of each diagram is the invisible oral (that is, pre-literate) tradition, and in many cases, this also forms an invisible periphery in locations where such tradition still exists. On the map the colour of each group reflects belonging to a certain linguistic branch of IE – hence Italo-Celtic is blue, Germano-Baltic green and the more easterly branch shades of orange/red. Each literature group is annotated by abbreviations, a purely space saving exercise; thus, Táin Bó Cúailnge 'The Cattle Raid of Cooley' becomes TBC. The position of the groups on the map is the location of the 'end-point' of each language group c. 500 BC and as such is not indicative of its point of origin or historical spread.

Introduction to the Dendrograph

The primary aim in constructing this dendrograph of Indo-European literature is to illustrate the relations between the literatures for comparative purposes, that is, to see if any patterns are discernable in the origin and spread of certain mythological motifs, and to attempt to formulate the reasons for that formulation/spread. The dendrograph is itself based upon an initial map (Map 1) illustrating the conjectured relationships between the different linguistic branches of the Indo-European language group (Map 2). Proximity of languages to one another, whether this is geographical or linguistic, suggests the possibility of shared institutions and traditions which we might see further reflected in the literature/mythology produced in each region. Thus, both linguistic and geographical proximity (often, but not necessarily shared features) acts as a justification for comparing mythologies.



Map 1. Conjectured spread of IE languages from (pre-)Proto-IE in Anatolia and the later (Mature) Proto-IE in the Balkans after Renfrew. Blue stems are 'centum' languages, purple 'Satem'(Grigsby)

Map 2. Extent of Indo-European languages c. 500 BC. (Grigsby)

Relationships between language and literature within the IE group are not limited to geographical or linguistic proximity alone, however: temporal proximity is also of importance. Geographical proximity alone does not guarantee correlation between literatures, nor do great geographical distances preclude it. The Irish and Hindu literature, for instance, though at separate ends of the IE world contain many similarities (especially regarding the Cattle theft) , one that is perhaps due to preservation of early material shared by both due to their location on the peripheries of IE linguistic spread and thus representing, perhaps, an initial, undiluted, cultural advance in much the same way as when a drop of red ink on water is followed by a drop of blue at its centre a rim of red ink continues to exist at the circumference of the spreading disk of (now purple) colour. The same phenomenon might explain why Tocharian, the most easterly of Indo-European languages is a 'Centum' rather than a 'Satem' language (that is, it uses a word derived from 'Centum' for 'one hundred', a feature of most western branches of the IE language tree, as opposed to the more typically eastern 'Satem') despite the usual approximation of 'Satem' with easterly spread (Indo-Iranian); Tocharian, once (but no longer) linked to the Celto-Italic group (Forston 2010, p. 401) may represent a very early break from PIE when this was wholly a 'Centum' language, the development of 'Satem' languages being a later occurrence among the group that would become Indo-Iranian, arguably in a region close enough to either influence or to have stemmed from the same linguistic melting-pot as Baltic, which shares a Satem base (Forston 2010, pp.58–9).

It is clear, then, that several difficulties and complications are inherent in a reconstruction of relationships (in mythological motifs found in literature) such as must be undertaken here. One major difficulty lies in the assumption that 'earlier' means 'better' and thus our earliest sources, Hittite cuneiform scripts, ought to be 'closer' to PIE culture than, say, Baltic folktales collected and translated over the last two hundred years. Immediately one must state that Hittite possibly broke from (Pre-?)PIE (or Indo-Hittite as this early group was once known) before the formation of what we (after West 2007, p.5) might term Classic or Mature PIE (MPIE) and thus may not be that related, mythologically, to any of the other branches which sprouted at a later date from MPIE; it might be that there had always been a large amount of Near Eastern influence on Hittite myth - whereas the Baltic material comes from a linguistic branch deemed hyper-conservative amongst linguists, and thus perhaps does provide relatively unchanged and uncorrupted MPIE mythological material; counter-intuitively for the archaeologist, a two hundred year old folktale might be of more use than a 3000 year old cuneiform religious text. But the use of the dendrograph in this study is not to highlight the best sources for IE mythology *per se*, but to highlight what sources might best help us in reconstructing a NW European mythology.

The task of the mythologist is not easy, especially one undertaking a comparative study using differing sources, which can elicit criticism; although West (2007) points out that gods don't tend to evolve in as orderly a fashion as the language which records them does, the mythologist need not have to apologise for her/his of disparate sources, seeing as these are the very sources the linguists himself uses:

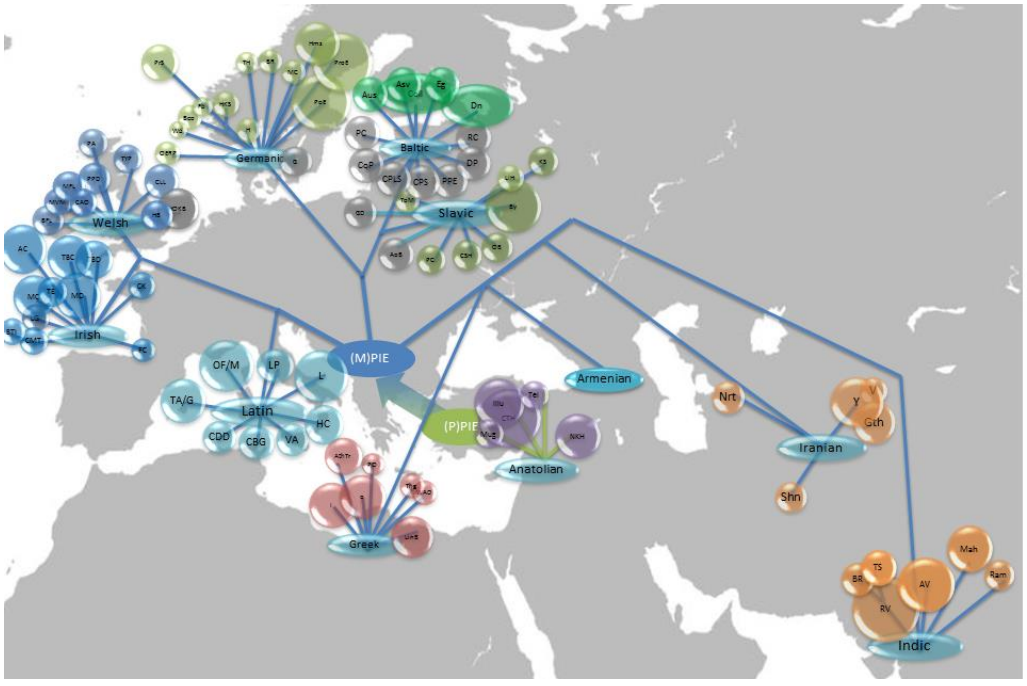
> It might be thought that nothing sound could possibly be built from such diverse materials. But Indo-European linguists are in a similar boat. They work on the one hand with Hittite and Vedic texts that are over three thousand years old, on the other hand with Albanian or Lithuanian, which were first recorded no more than five or six hundred years ago. (West 2007, p.12)

This reconstructive approach based on the dendrograph aims to justify the use of comparative IE mythologies to flesh out and support (often fragmentary) motifs in the surviving NW European traditions. It has been tempting in the past to utilise comparative mythology willy-nilly to find parallels that support a given thesis (criticisms aimed at such as Campbell, Eliade, Jung and Dames), but such an action often appears unscrupulous and needs clear justification. A reason must be given why certain mythological traditions are being used to flesh-out or compare with those of another. This, then, is the aim of the dendrograph, to provide such support in a clear visual format. It will, for example, show that the use of Germanic myth to support Celtic material is reasonable due to both the geographical proximity and the known interaction between the cultures (for example during the Viking settlement of the Dublin area). The proximity of the Baltic branch, which is from the same linguistic stem as the Germanic, suggests we might find correlations here, too. That the Baltic languages developed from a general 'region' of PIE known as the 'Satem' region – shared with Indo-Aryan and Armenian, suggests we might, at some early point, expect to see a relationship between the Baltic and the Indo-Iranian cultures, and so forth.

The dendrograph will be most useful in the plotting of the spread of various motifs. Is, for instance, twin cosmogonic symbolism found in all literatures suggesting a very early PIE origin? Is the primal sacrificial bovine as a female (Auðumbla in the Germanic world) a motif shared equally through all extant branches or does it lie, as Lincoln suggests, in Western Europe only? And if it is limited geographically is this because it dies out at an early point elsewhere or because it is a 'native' i.e. non-IE motif that is adapted later in a limited geographical locale? Might such a later borrowing, if Lincoln is correct, find any parallels in, say, the myths of the Near Eastern world, or the myths of non-IE speakers such as the Finns or Basques – and where and when might the 'borrowing' into IE have taken place? The dendrograph will hopefully forma basis of such questioning.

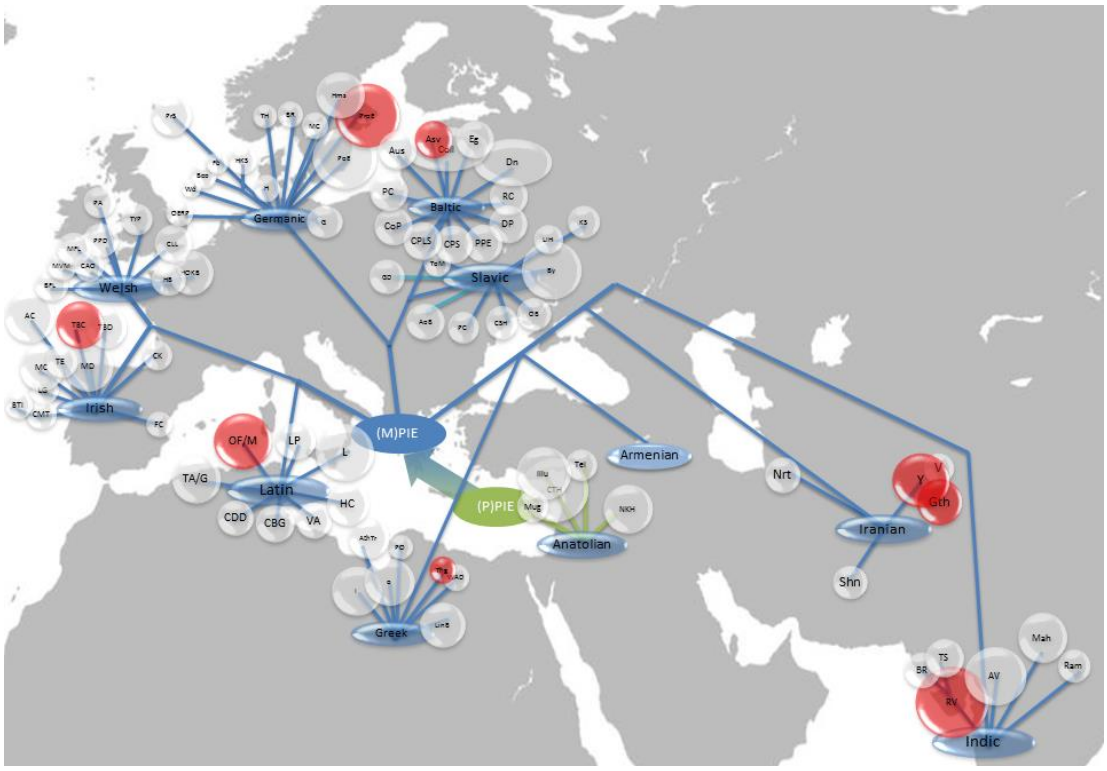
The maps

As stated above, the dendrograph that I am building rest upon an initial map of linguistic spread. Prior to the construction of the literary dendrograph, then, I have created a simple map (Map 1) of linguistic spread. Such a map can only be a cursory attempt at reconstruction given the difficulties in creating a valid visual reconstruction. The difficulties involved stem from many causes, not least the fluid state of linguistic studies which, as yet, have failed to produce a consensus on how the languages of the IE family tree achieved their later identities. Even if one theory were chosen (as I have done with Renfrew's adaptation of his own Anatolian model) there remains an impossibility in depicting language change visually, which is why one does not find such maps in books on IE linguistics. Instead we have several diagrams that suggest formation such as the wave diagrams (of Schmidt, Anttila *see* Mallory 1989 pp.19–21); others seek to do away with any attempt at geographical distribution and construct a mathematical tree-diagram of branches (Hamp and Ringe, Warnow and Taylor *see* Mallory and Adams 2006, pp. 74 & 80); most show stems jutting from a central block of PIE. But obviously these splits did occur at geographical points, and so the temptation is to construct a geographical map based on such splits – though the usual map covered in 'Dad's Army' style arrows is very limited – it suggests clear linear movement rather than 'clouds' or 'zones' where languages perhaps altered or divided, or even merged. To do the material justice one requires a multi-dimensional map that includes changes over time, as a 2D map can only give us a single snapshot; it cannot show the movement itself. The map I have included here is a rough one only, a tool to which I will refer in the text, but which does not aim to be any more than a rough summation.



Map 3. Main literature groupings in IE languages

The initial dendrograph I have produced (Map 3, above) shows the main literatures of the linguistic groups placed upon the chart in rough geological spread – this suggests which literary traditions might be seen to be grouped due to a number of criteria – these being a) cultural influence or familiarity due to geographical proximity (i.e. Celtic to Germanic, Germanic to Baltic, Baltic-Slavic to Indo-Iranian) b) geological groupings based on shared geological localities – i.e. we would expect to find similar mythological emphasis in language groups that share, say, coastlines on the Atlantic (Celtic/Germanic) or those that are found on Steppes or desert; if similarities are found a question that will need answering is whether such similarities are a) due to a shared origin from PIE or b) due to a development post-split from PIE amongst certain off-shoots; in the latter case it will then need to be investigated whether this development is (i) due to geological influence alone (like conditions giving rise to like world-views – for instance such a process might explain the similar themes of the literatures of the Irish myths of Fionn mac Cumhaill and Cúchulainn, fishing and hunting myths set in forested riverine coastal landscape inhabited by male-dominated potlatch-oriented warrior class, and, say, those of the Kwakwaka'wakw peoples of the Pacific Northwest (Boas 1925)) or (ii) due to the encountering of a prior indigenous (non IE?) tradition.



Map 4. Plotting shared motifs – highlighted in red - on the dendrograph

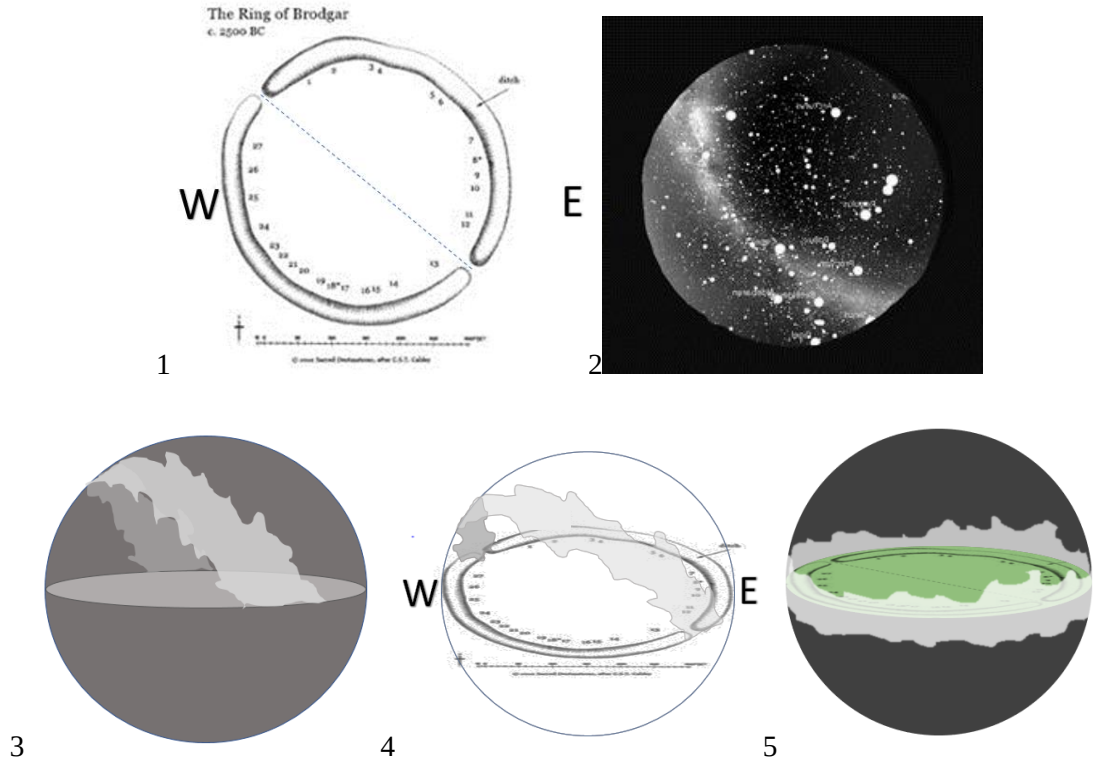
The calculation of whether a mythical motif within the extant literature is an 'original' (as in PIE) feature or a later development is not easy as it could be that a myth derived from a certain farming practice might vanish in linguistic groups that came to abandon that practice due to geological or cultural incompatibility – for instance if such a group moved to a territory where

that practice became impossible (i.e. to a desert), or the culture became, say, more nomadic and settled farming traditions became irrelevant (i.e. the Steppes). The limited appearance of a motif within the spread of literatures, then, might not be an indication that the motif is a later accretion adopted by an incoming culture but might in fact represent the remnant of a once-widespread tradition brought from the centre of a zone of expansion (PIE 'homeland') which died out in other branches. Thus, in the example mentioned above, and one I will concentrate in this thesis - the appearance of a (female) cow in Celtic and Germanic creation myths – is the appearance of the dismembered animal as a milch-cow reflect an original PIE tradition that is lost in other branches (in the Iranian Avesta it is an ox that is sacrificed) or is it a later development due to influence from European dairy farming cultures as Lincoln suggests? An original PIE myth concerning a Milch-cow, for instance, being primary over the ox would suggest that PIE might have developed among cattle farmers rather than nomadic pastoralists who encountered farmers on their later travels. One method of solving such a problem might be to look at neighbouring non-IE myth to see in which locales such a myth might have arisen. Is it present, say, in Near Eastern myths, suggesting a very early borrowing into PIE (if PIE developed in Anatolia) and thus a motif that has degenerated over time and lost/changed in some literatures rather than one which was adopted at a later point in a limited region?

Appendix 2. Gazetteer of Sites and Alignments

This appendix contains, in alphabetical order: site plans; location maps to show location of nearby water sources; images to show the orientation to the Milky Way; probable dates of construction (radiocarbon dates where available) followed by a record of the position of entrances and *Stellarium* images of stellar alignments through these entrances for the posited dates of the building of the complexes.

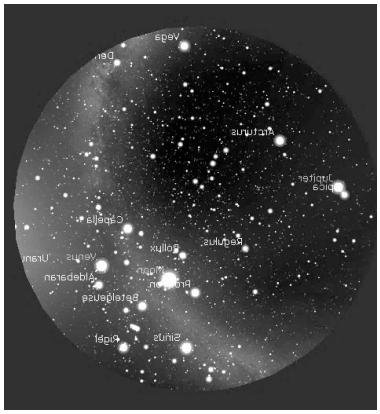
(Note, the position of the henge entrances (Fig A1) demarks the rising/setting points of the Milky Way where it touches the horizon; the path of the galaxy as shown in the *Stellarium* images in this appendix (Fig A2) appears artificially curved because such images represent a three-dimensional (hemispherical) form rendered in two dimensions; we ought to imagine these images as depicted in Fig A3, in which case the correspondence between site entrances (Fig A4) becomes more obvious – and we can understand how the galaxy was experienced as a linear pathway. When the Milky Way sites on the horizon, however, then it becomes circular (Fig A5), at which point the entire circuit of banks may be an analogue of the galaxy)



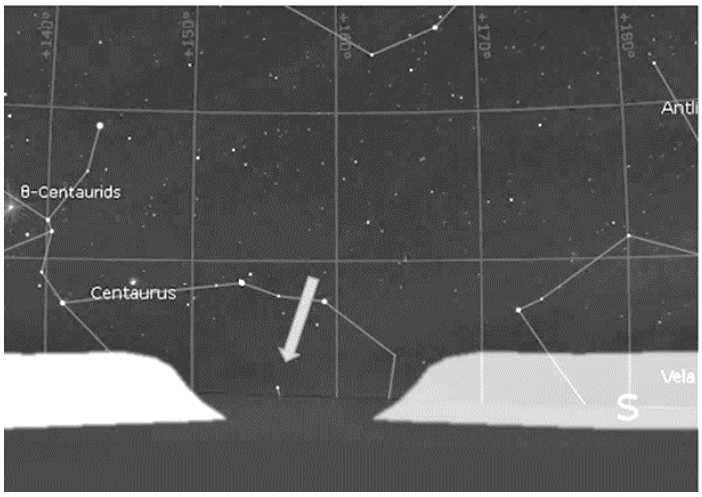
1 2 3 4 5

Figure A 1–5

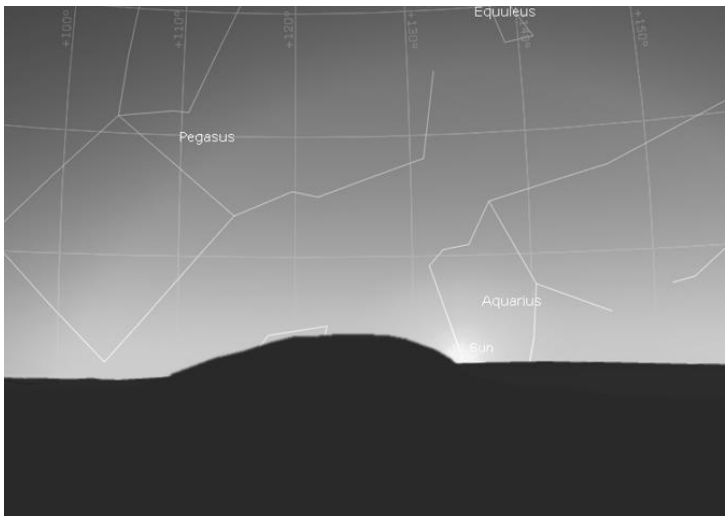
Arbor Low (Derbyshire)



Posited Date: 2800-2600 BC

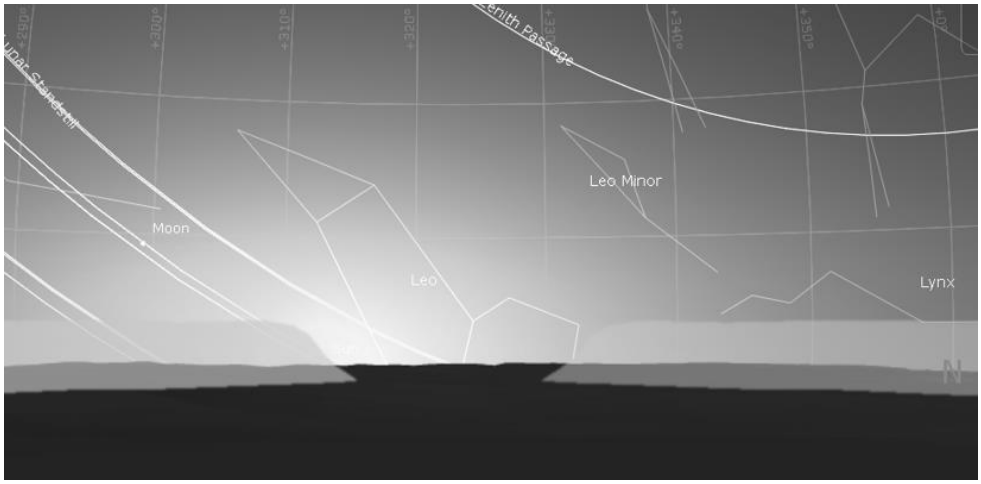


South-eastern entrance 150-165: aligns with rising of Gacrux at 156° c.2800 BC

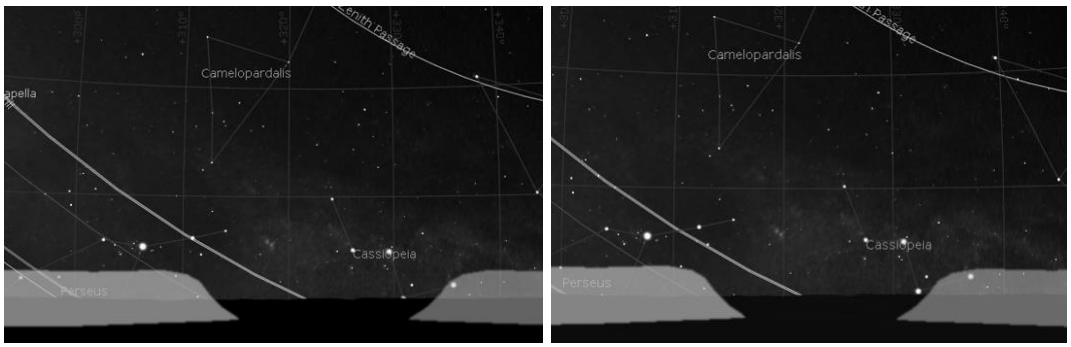


The southern edge of the tumulus on the henge bank (which sits at 105°-135°, its apex at 120°) aligns on the midwinter sunrise

Gibb barrow, (itself built on the site of an earlier Long Barrow) located at 225°, defines the setting of Rigel c. 2800 BC plus aligns with the Midwinter solstice sunset

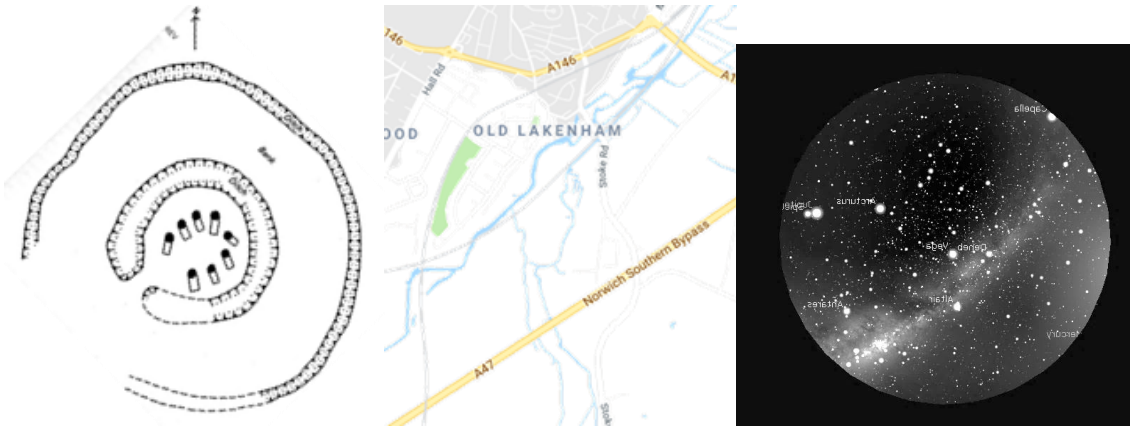


The north-western entrance at 315°–333° is oriented on the Midsummer solstice sunset

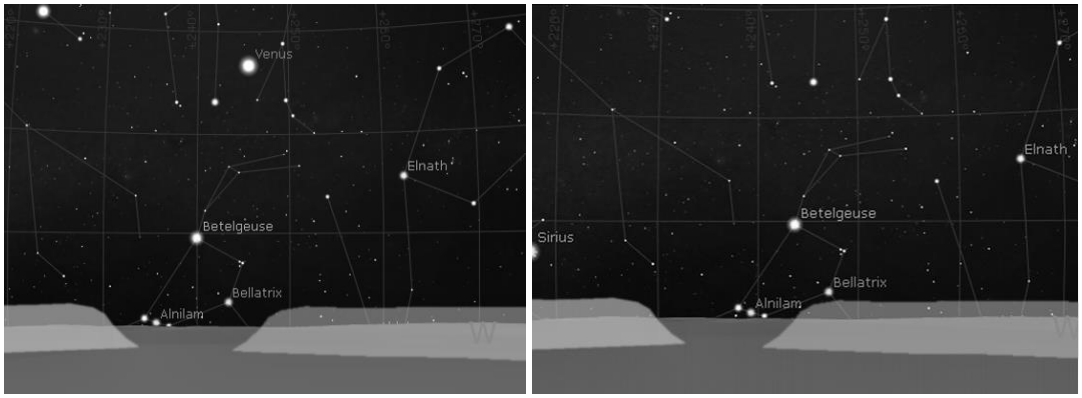


The north-western entrance also aligns to the setting of Cassiopeia c.2800 (left) and c.2600 BC (right)

Arminghall (Norfolk)

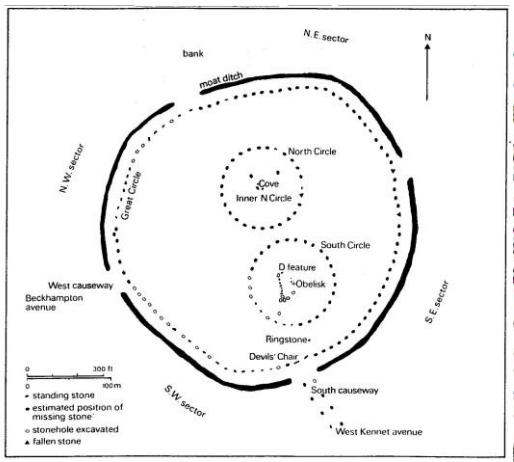


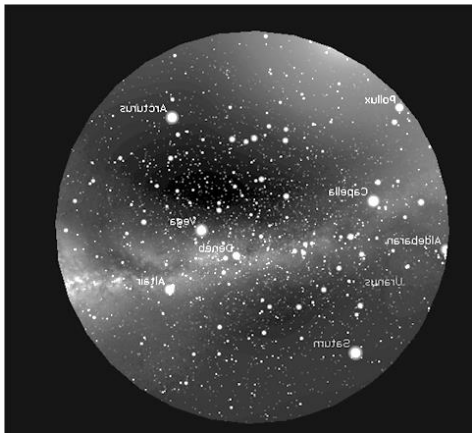
Dated to c.3600–2700BC (3622–2679 BC post-pit)

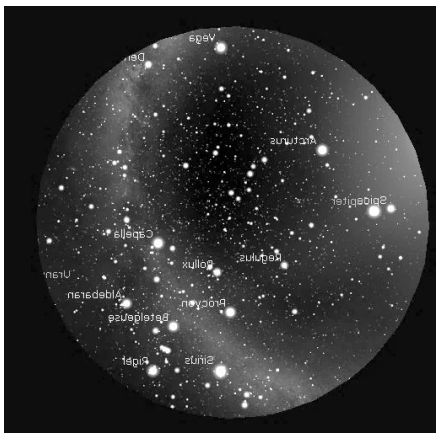


The south-western entrance 230°–245° aligns on the setting of Orion's belt (left) c.3400 BC) and (right) c.3000 BC

Avebury (Wiltshire)







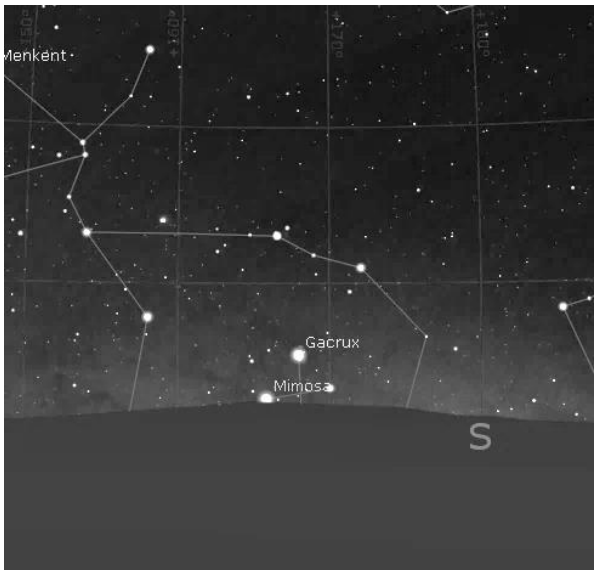
The Kennet flows roughly NW-SE to the west of Avebury then west to east to its south, hence all 4 entrances mirror the orientation of rivers and the Milky Way.

2900-2300 BC (Pitts 3304–2625 BC henge S entrance, antler; 2917–2471 BC NW bank antler).

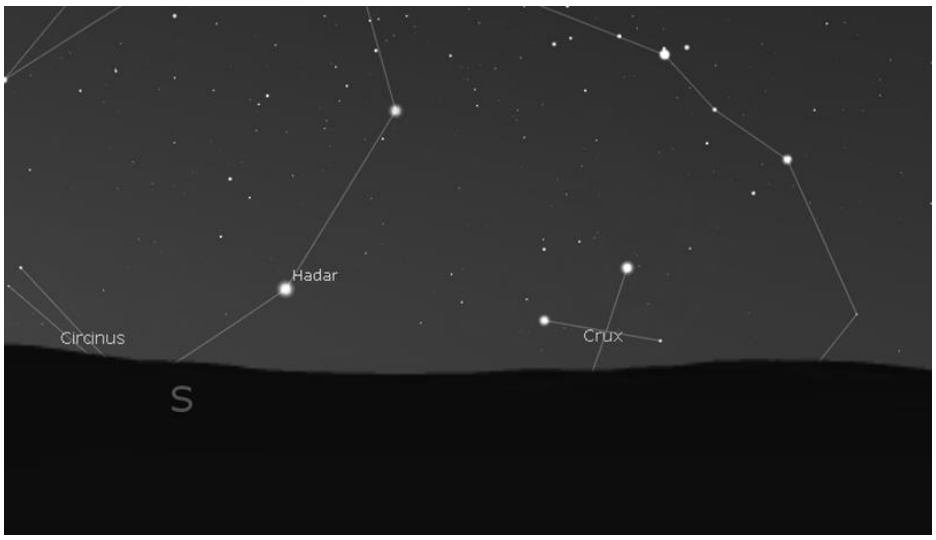
The eastern entrance at 66°–75° is oriented towards the Orion Point sunrise at 75° at the start of May

155° – rising of Gacrux over Waden Hill

164° rising of δ-crucis over the apex of Waden Hill

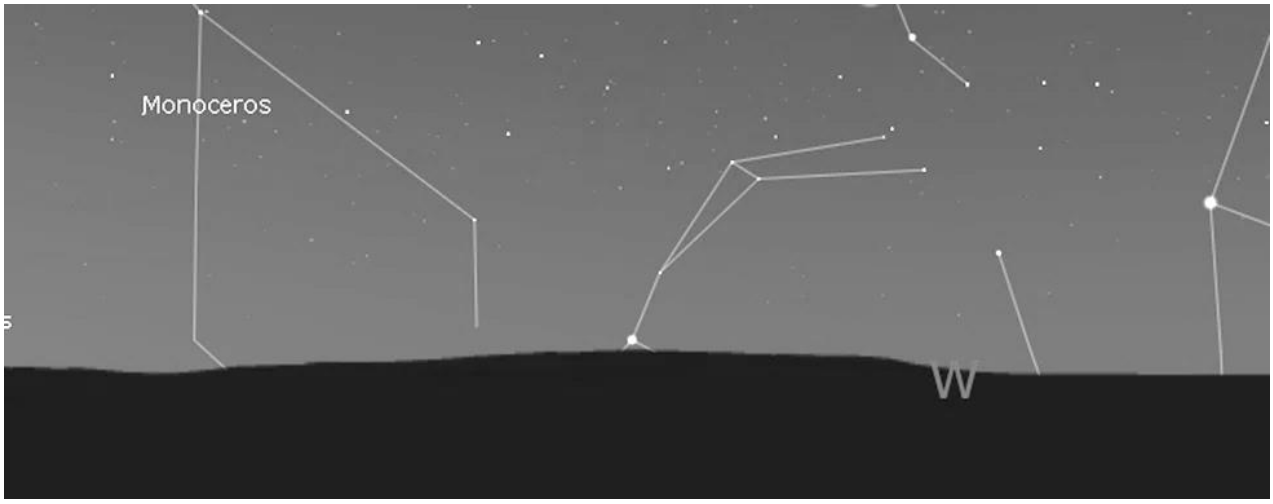


The southern entrance 165°–175° aligns on the rising of Mimosa over the peak of Waden Hill at 165° c.2800 BC

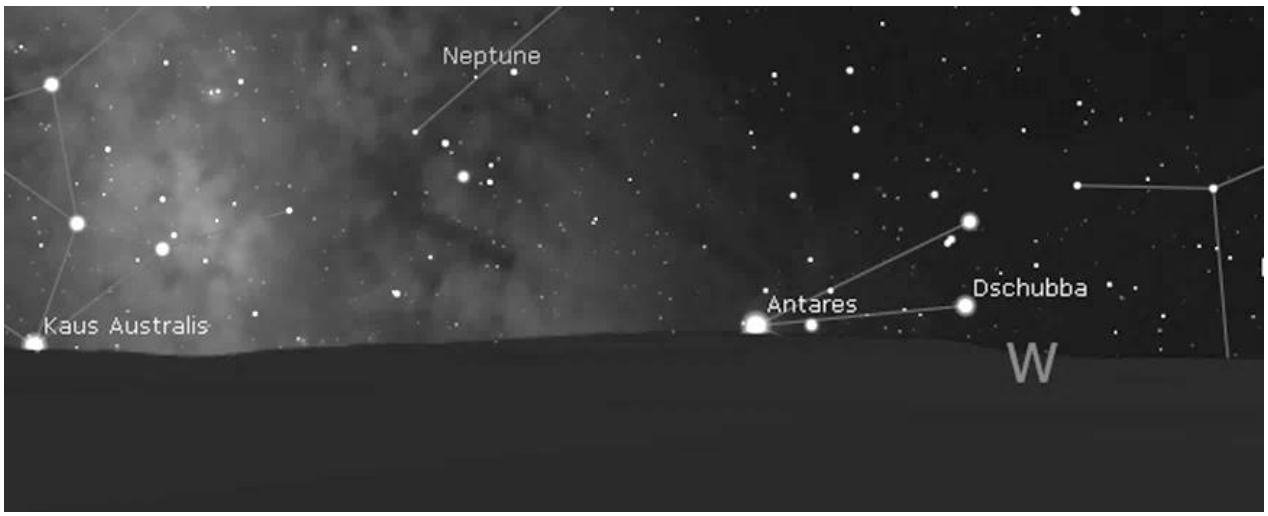


The setting of Crux at 194° c. 2800 BC occurs over the point where Silbury Hill is later built

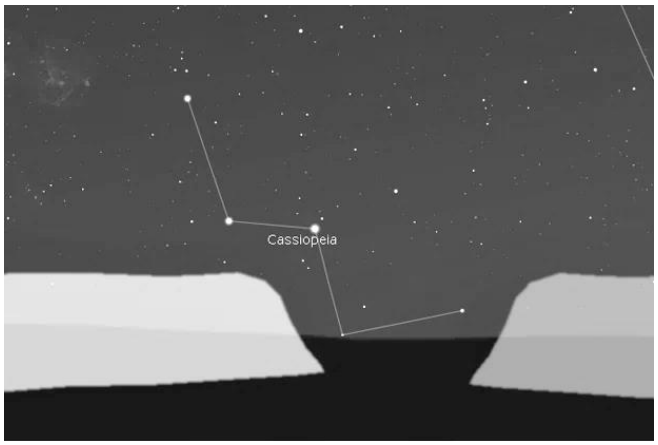
The western entrance at 253°–263° may reference the setting of Aldebaran at 263° c.2800 BC

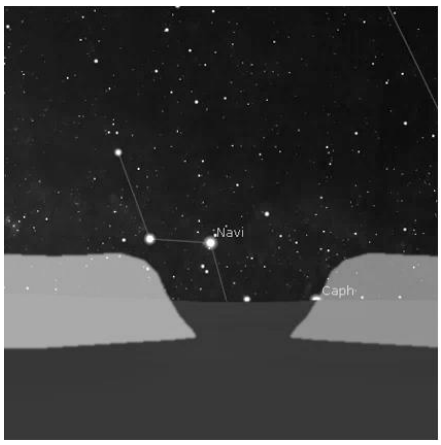


The western entrance at 253°–263° may reference the setting of Betelgeuse at 258° c.2800 BC



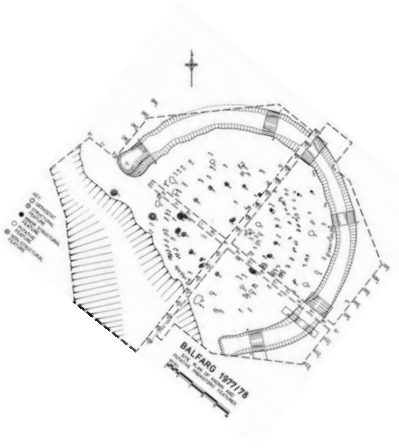
The western entrance at 253°–263° may reference the setting of Antares at 260° c.2800 BC

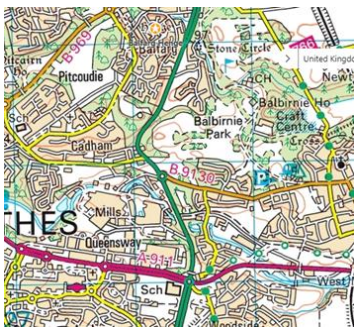


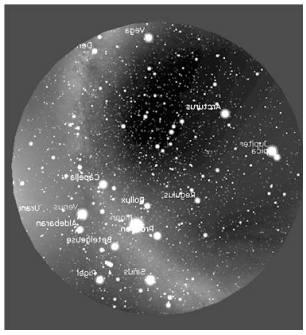


The northern entrance 325°–335° gives views of the setting of Shedar at 328° (left) followed by Caph at 335° (right)

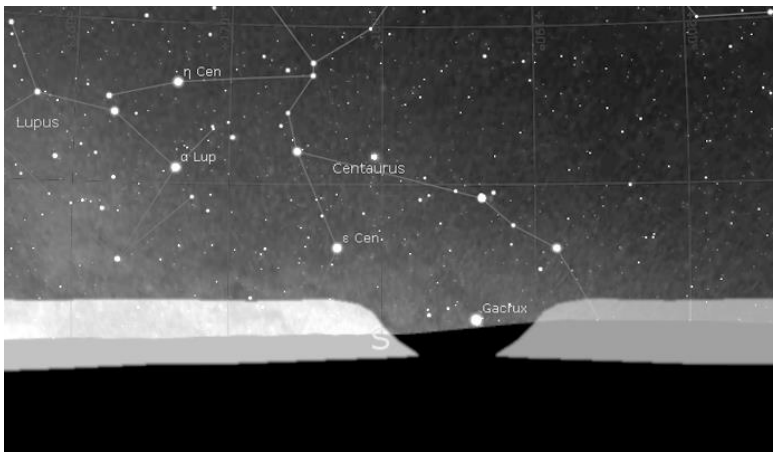
Balfarg (Fife)



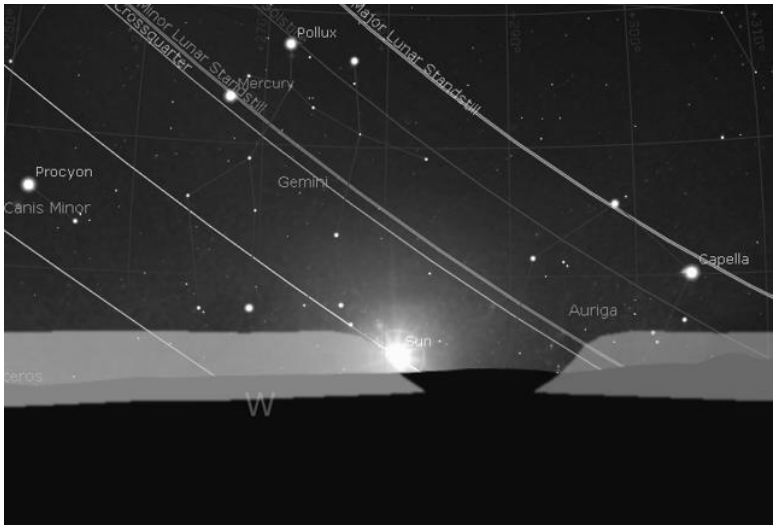




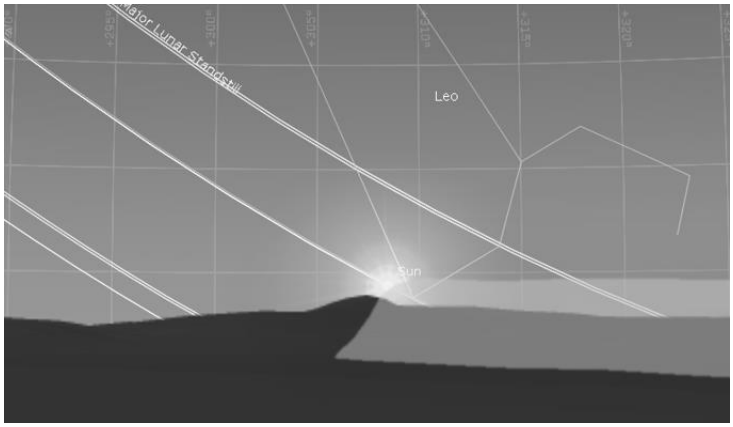
3340 to 2910 cal BC charcoal GU-1670 and 3020 to 2620 cal BC GU-1902 (Scottish RC database)



Southern Entrance 182°–190° frames the setting of Gacrux c.3000BC

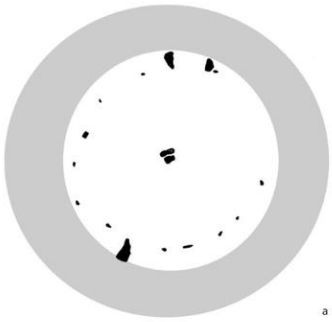


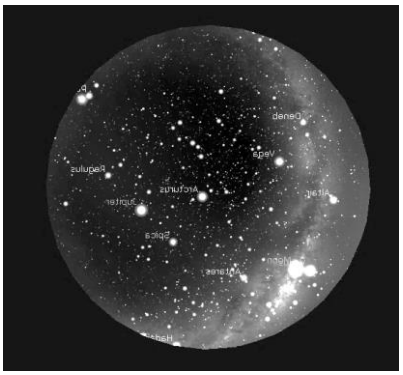
North-western entrance 282°–295°: The Sun sets at 282° in the Orion Point around mid-April c.3000 BC



The north-western entrance bank and distant hill define the Midsummer sunset at 305°

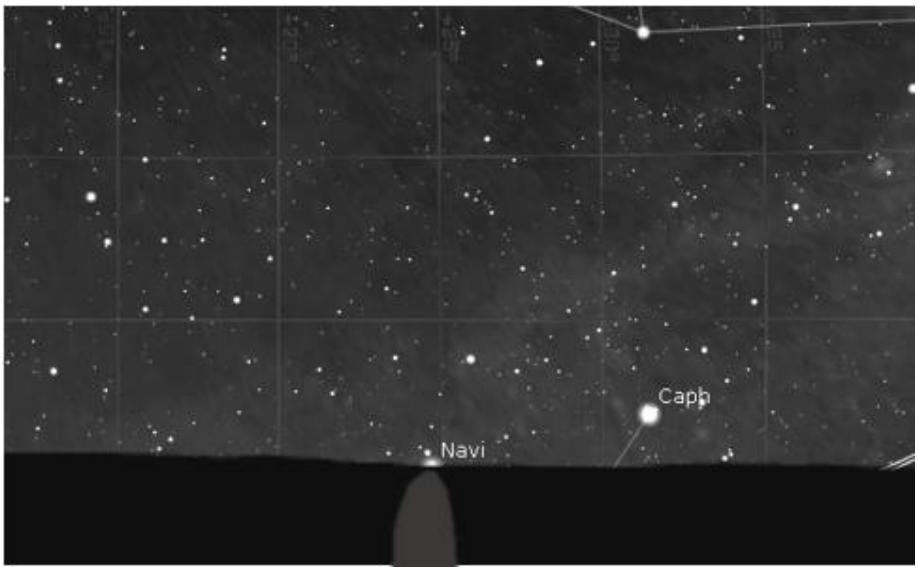
Bryn Celli Ddu henge (Anglesey)



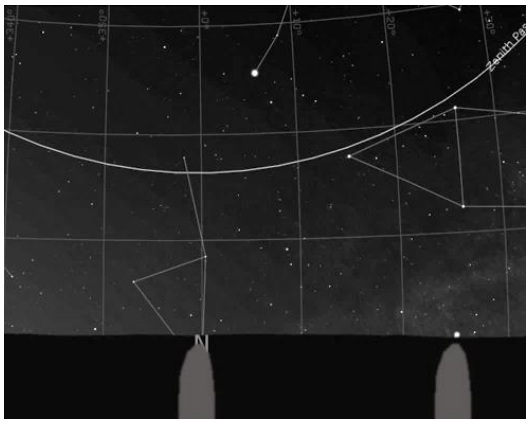


Date: (Hemp 1930, 197) [36.165/9]Prunus avium/padustype: 1 frag., 0.08 g.3100–2890 calBC

Stone hole ‘I’ in stone arc 8.4 g (adult >18 yr.) UB-7116: 4573±40BP; –21.0δ13C (Hemp 1930, 203) [99.39H/14]3500–3100 calBC

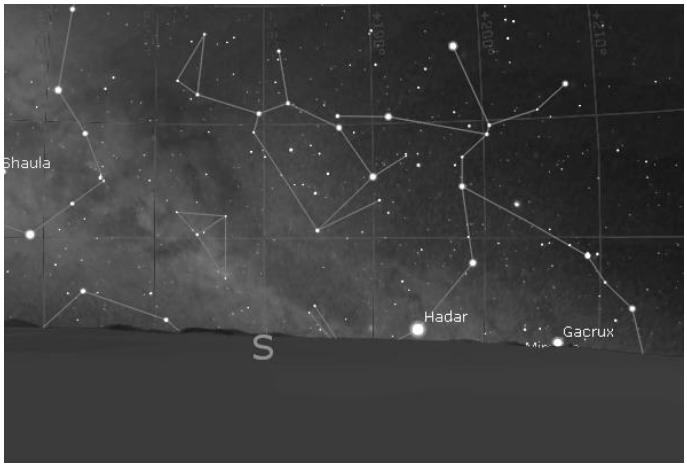


Stone at 24°: rising of Navi c.3350 BC



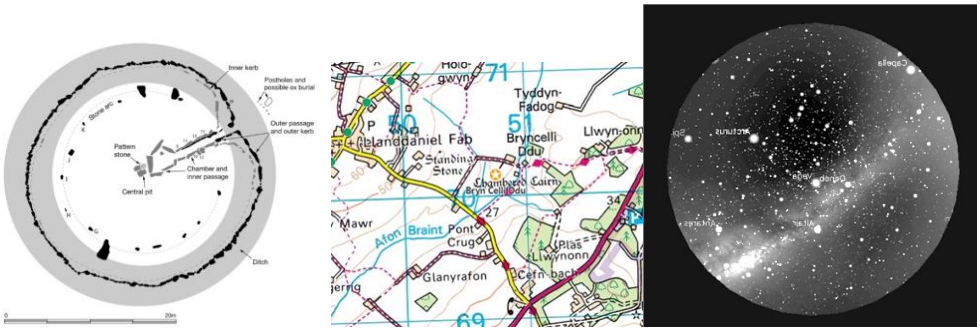
Stone at 24°: rising of Caph c.3100 BC; Stone at 24°: rising of Ruchbah c.3000 BC

Stone at c.203–7°: setting of Mimosa c.3350 BC

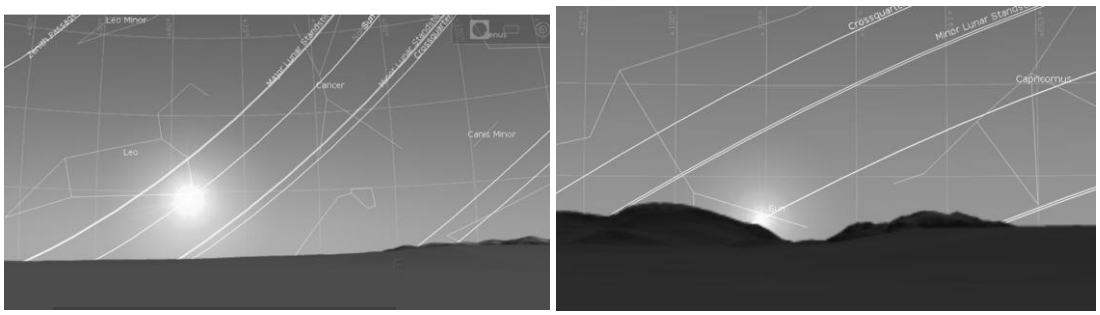


Stone at c. 203–7°: Setting of Gacrux 3000 BC

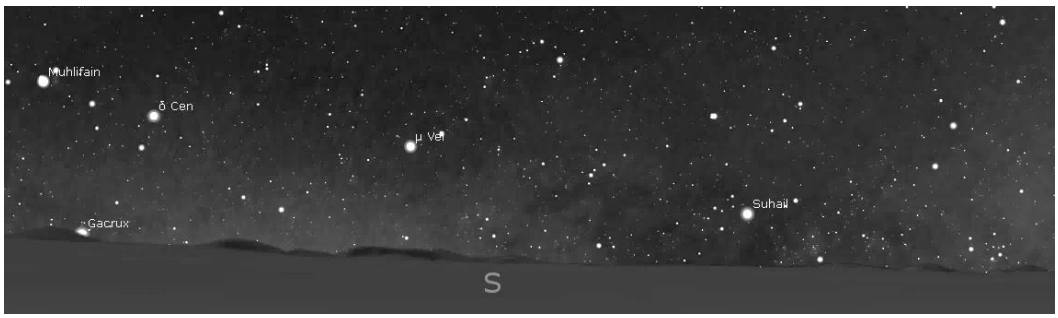
Bryn Celli Ddu Passage Grave (Anglesey)



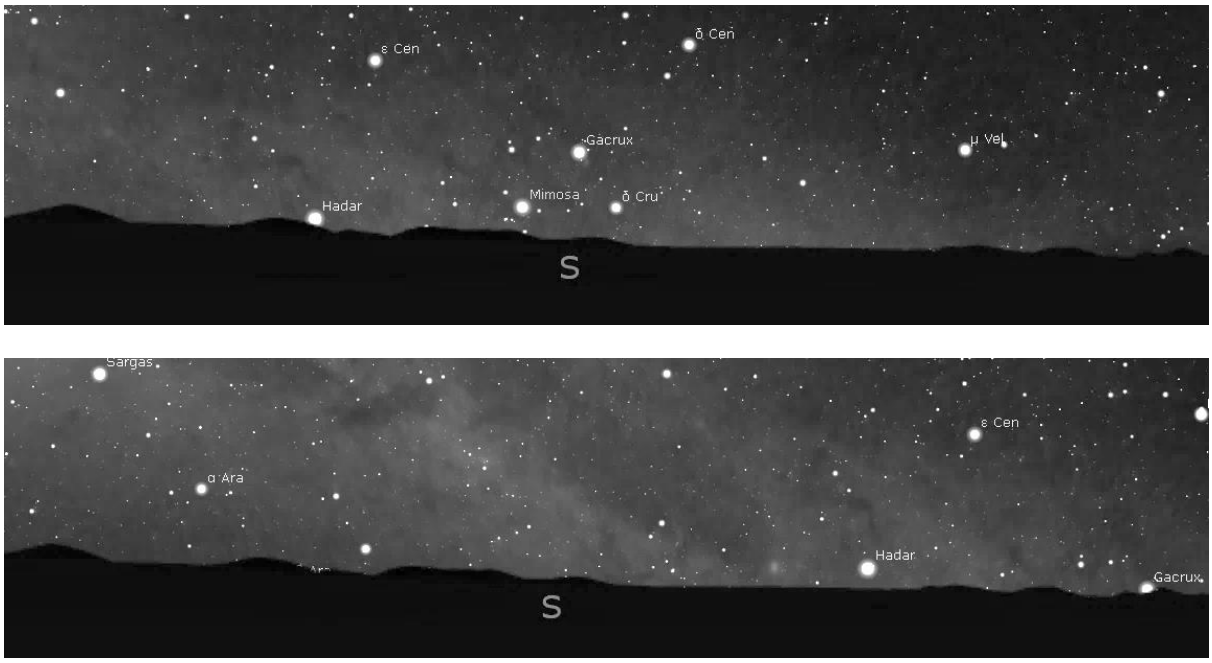
Built c. 3045 and 2978 cal BC at 1 sd and 3074 and 2956 cal BC (Burrow 2010)



Passage entrance: Summer Solstice Sunrise at 63° (left); Midwinter sunrise occurs in a cleft in the mountains at c.135° (right)

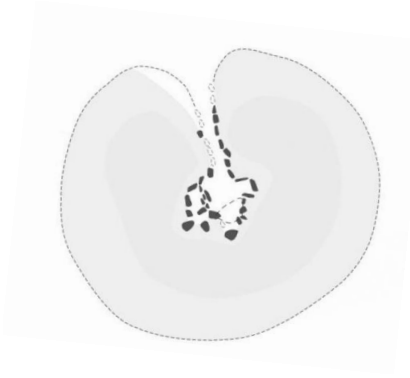


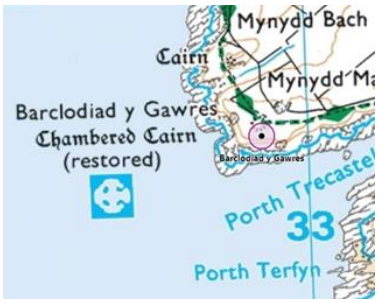
Gacrux rises from the peaks of the mountains to the east of the cleft

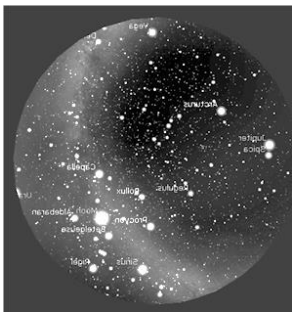


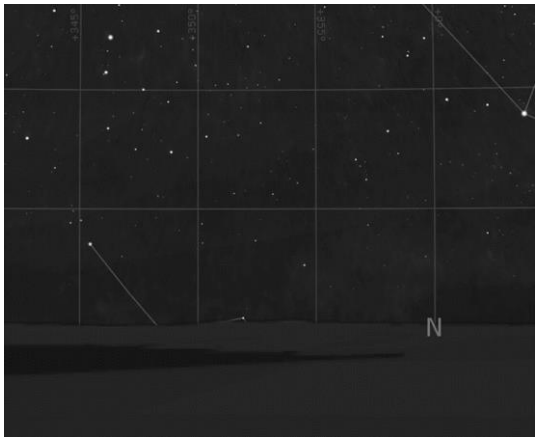
C.3000 BC Crux and Hadar rising over in Snowdonia and setting over the distant peaks of the Llŷn Peninsula

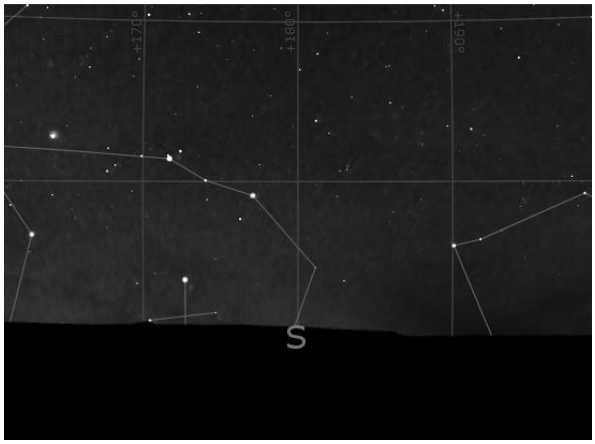
Barclodiad y Gawres (Anglesey)



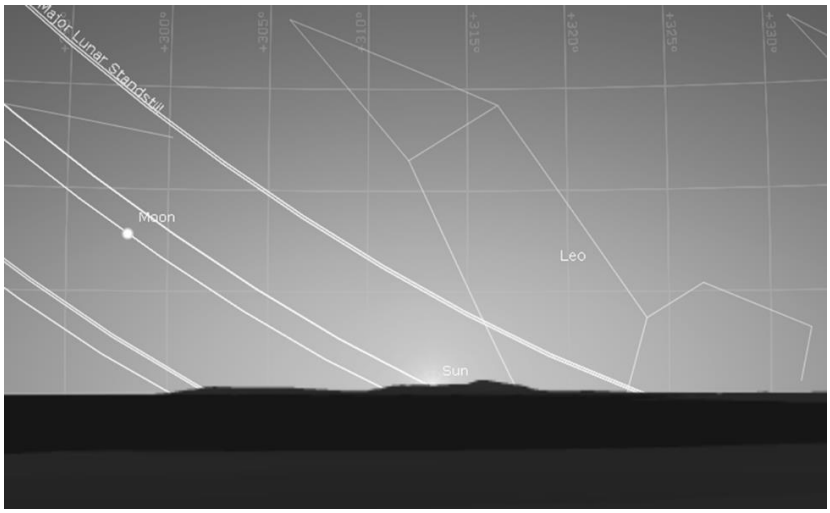






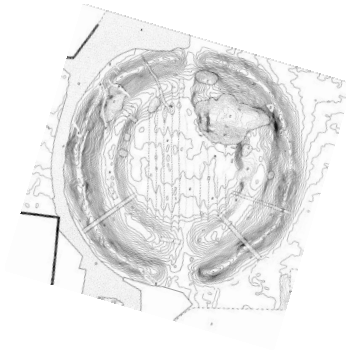


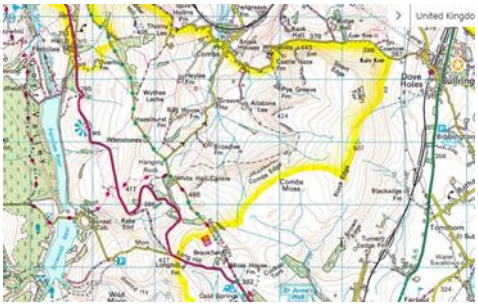
North-western entrance 338°–011°: Navi brushing the northerly peak at 352° that arguably defines the passage alignment c.2600 BC (left); The passage, from the exterior looking in, is oriented towards the rising of Mimosa at 170° c.2600 BC (right)

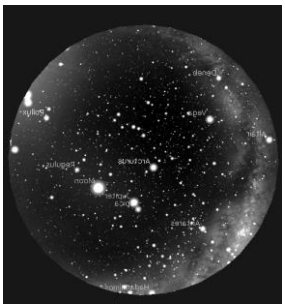


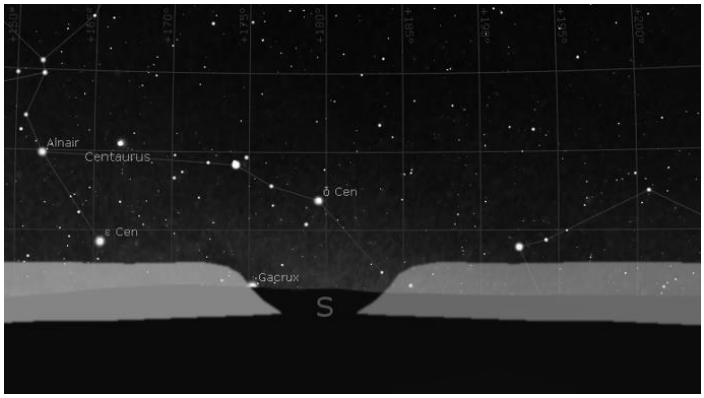
The midsummer sun sets at 312° behind hills across the bay, visually reminiscent of the Hills of Hoy as seen from the Stones of Stenness

Bullring (Derbyshire)

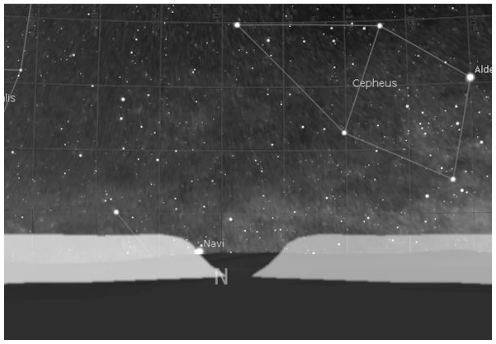


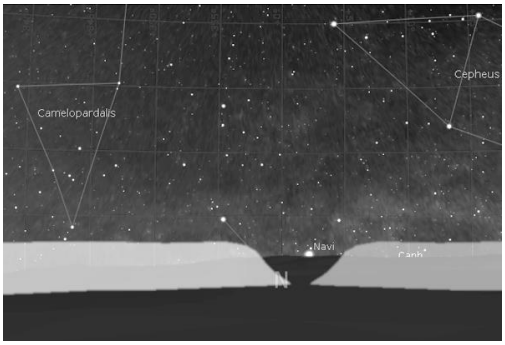


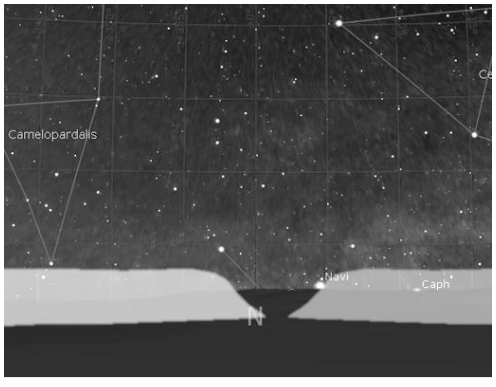




The southern entrance 175°–183° defines the rising of Gacrux c.2120 BC

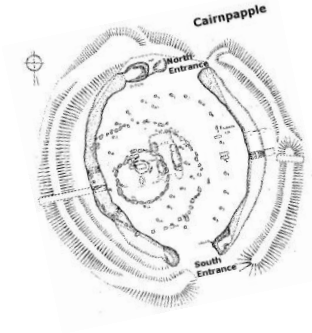


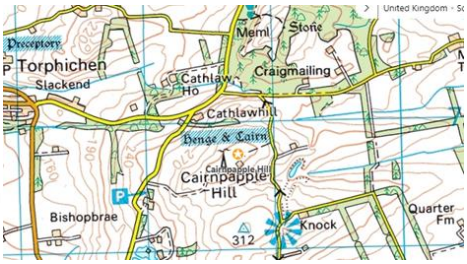


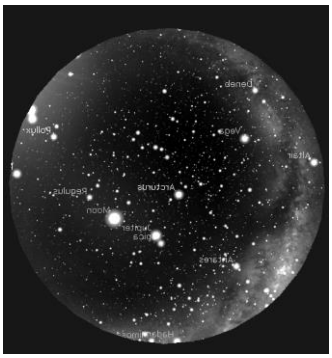


Through the northern entrance 358°–004° one could see Navi set at 358°, roll over the hill to the north, then rise again at 004°

Cairnpapple (West Lothian)

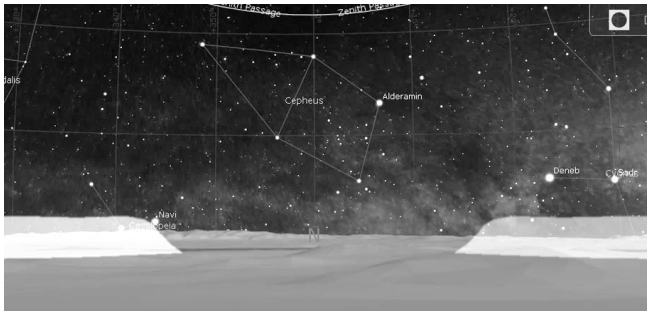


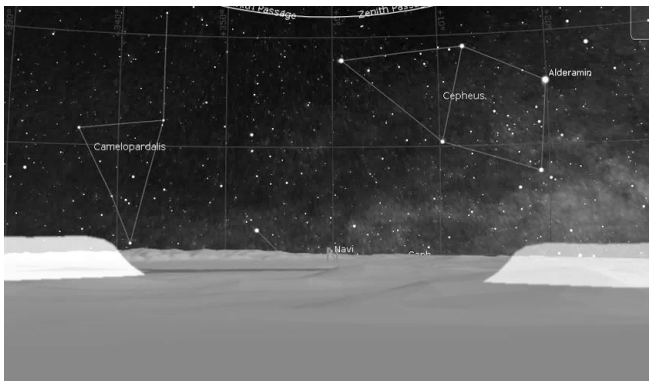


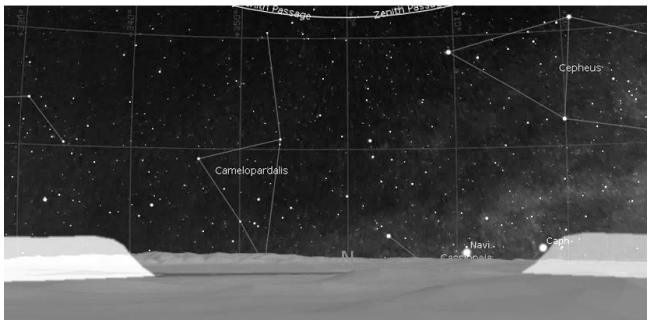


No river alignments

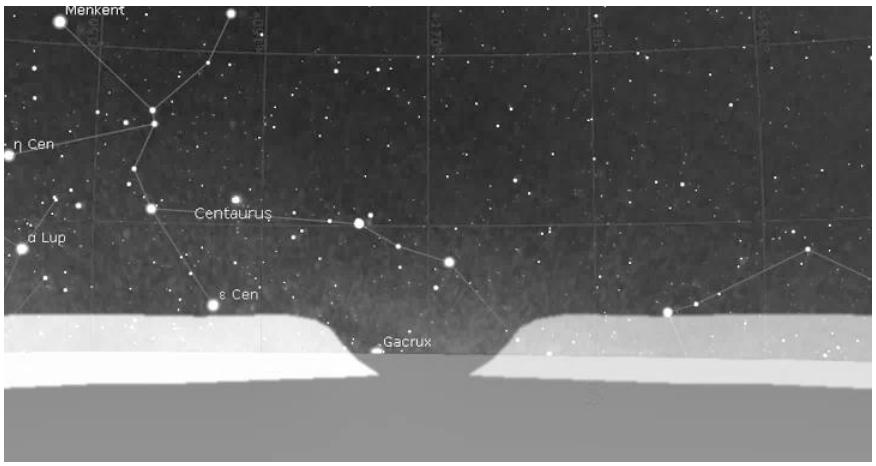
3800 BC earliest Neolithic activity (Piggott 1948)vol.82 (Edinburgh, 1947-8)but HISTORIC ENVIRONMENT SCOTLAND STATEMENT OF SIGNIFICANCE states 3000 BC for construction of henge.





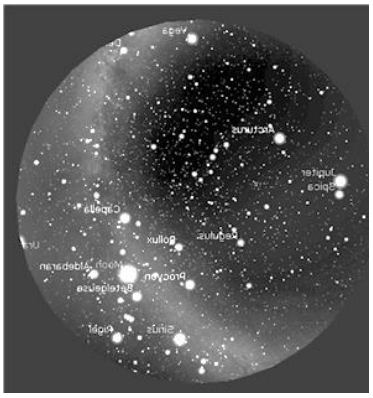


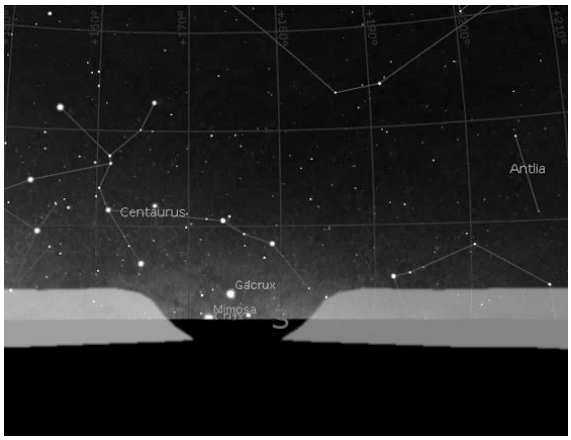
The northern entrance 345°–017° defines the setting and rising of Cassiopeia c.3000 BC

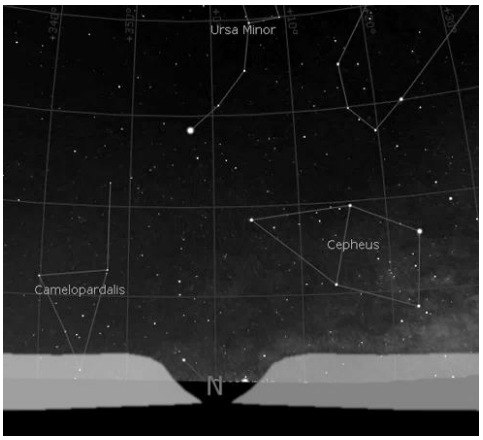


The south-eastern entrance 155°–175° frames the rising Gacrux at 167° at the same moment as the setting of Navi to the north

Cana Barn (North Yorkshire)

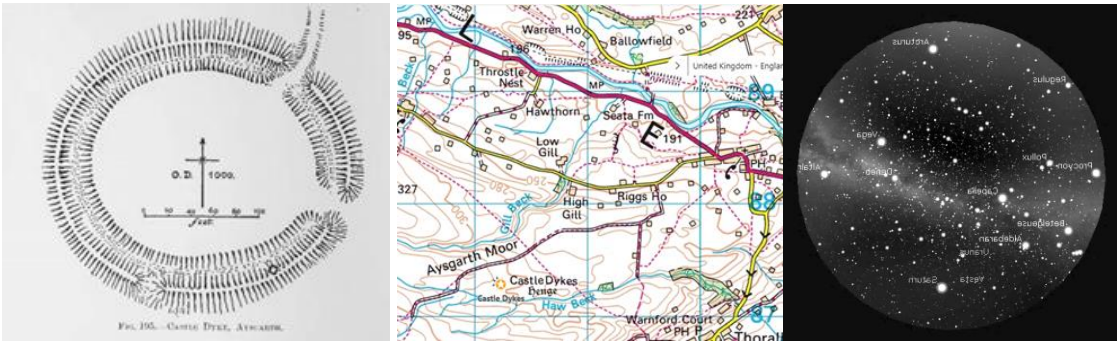




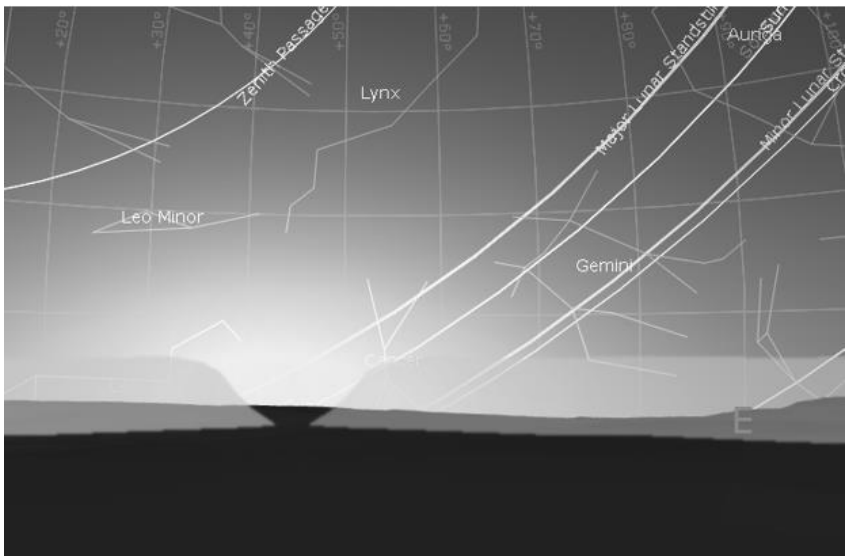


The southern entrance 167°–184° defines rising of Crux c.2650 BC (left); The northern entrance 354°-004° frames the rising of Navi in Cassiopeia c.2650 BC (right)

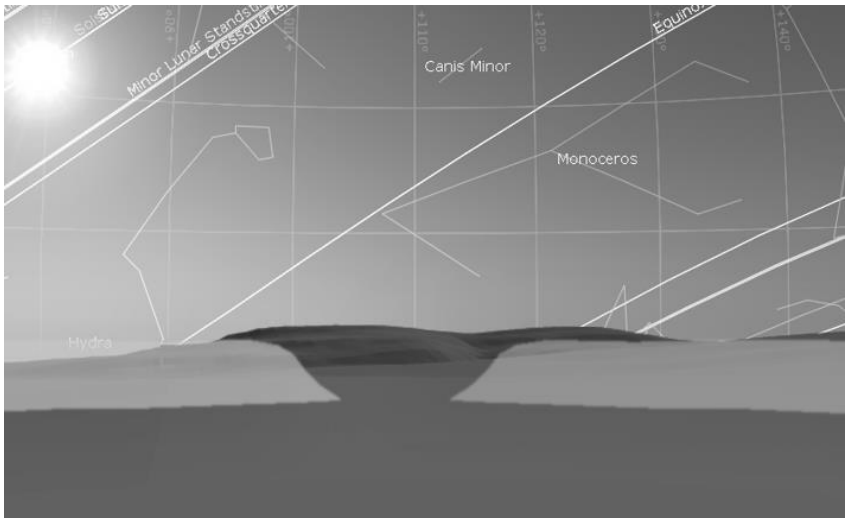
Castle Dykes (N Yorks)



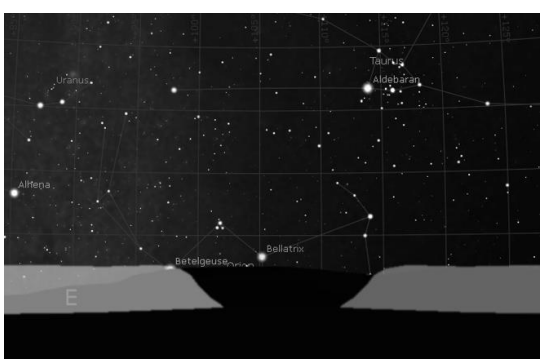
c 2000 BC

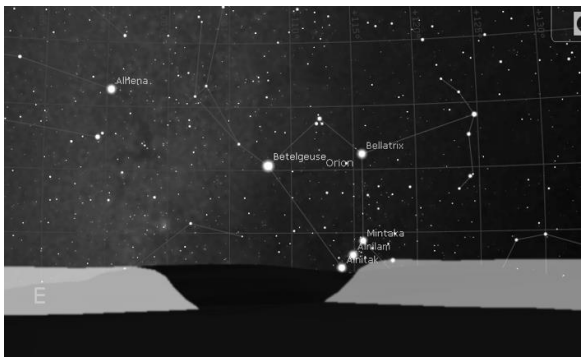


The north-eastern entrance 40°–50° frames the summer solstice sunrise at 43°



The south-Eastern entrance at 100°–115° looks towards a double hill

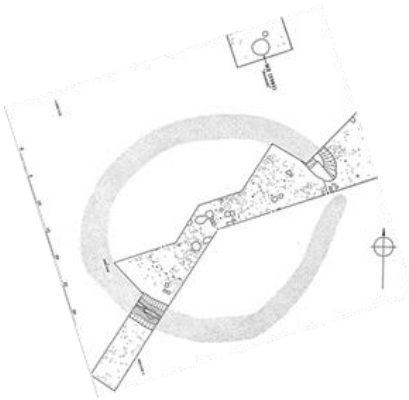


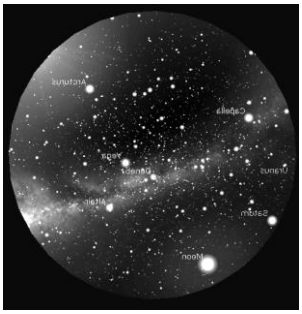


This hill defines the rising of stars in Orion c.1800 BC

Coneybury hill henge (Wiltshire)

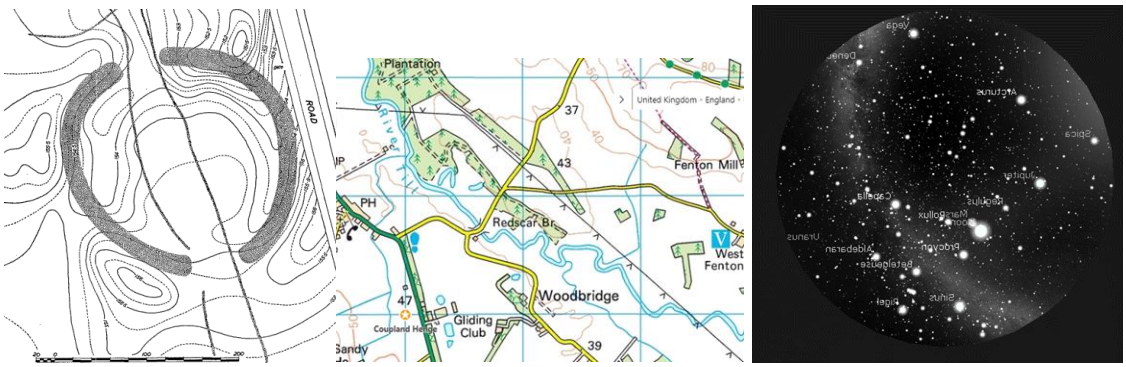
3000-2800 BC (ditch primary – bone - 3349–2764 BC)



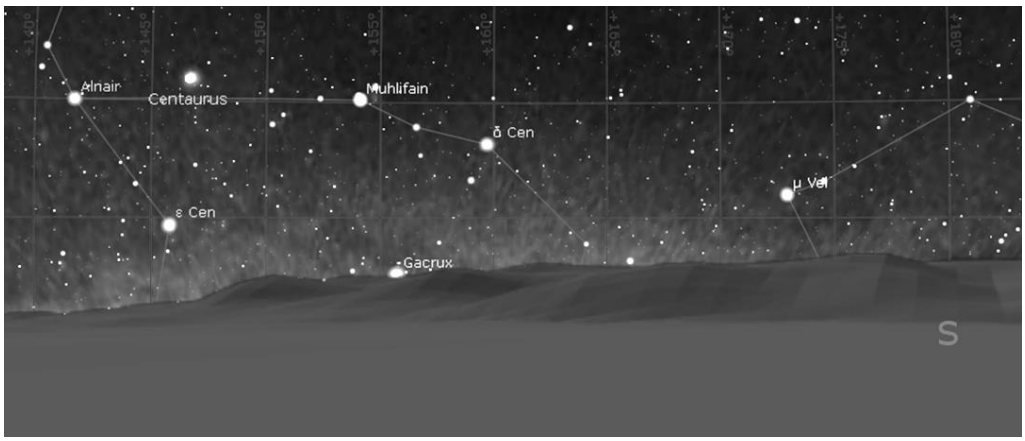


The eastern entrance 68°– 75° gives views towards the rising of Altair c.2800 BC at 75 ° and/or the sun rising in the Orion Point at the start of May.

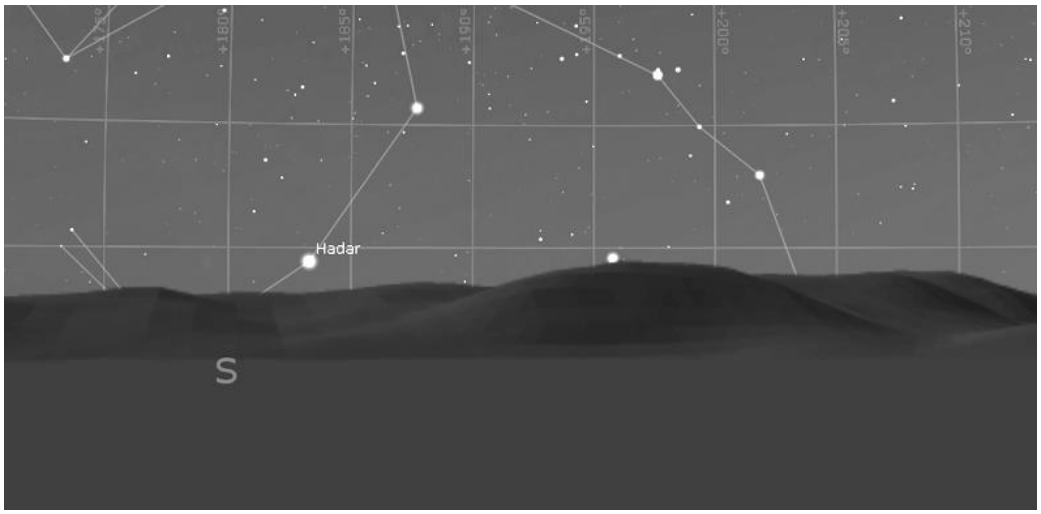
Coupland (Northumberland)



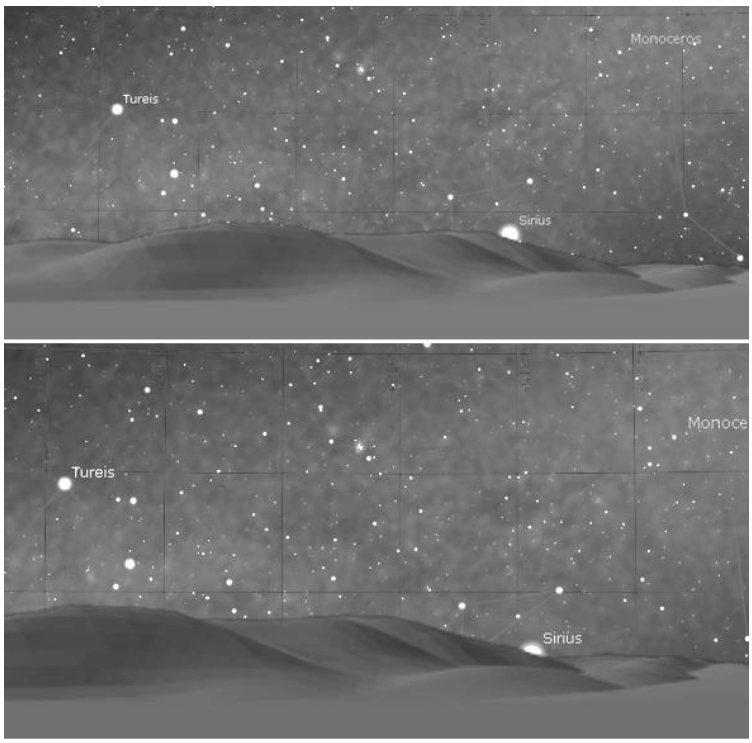
4030-3710 cal BC (OxA-6832) (Waddington 1996a)



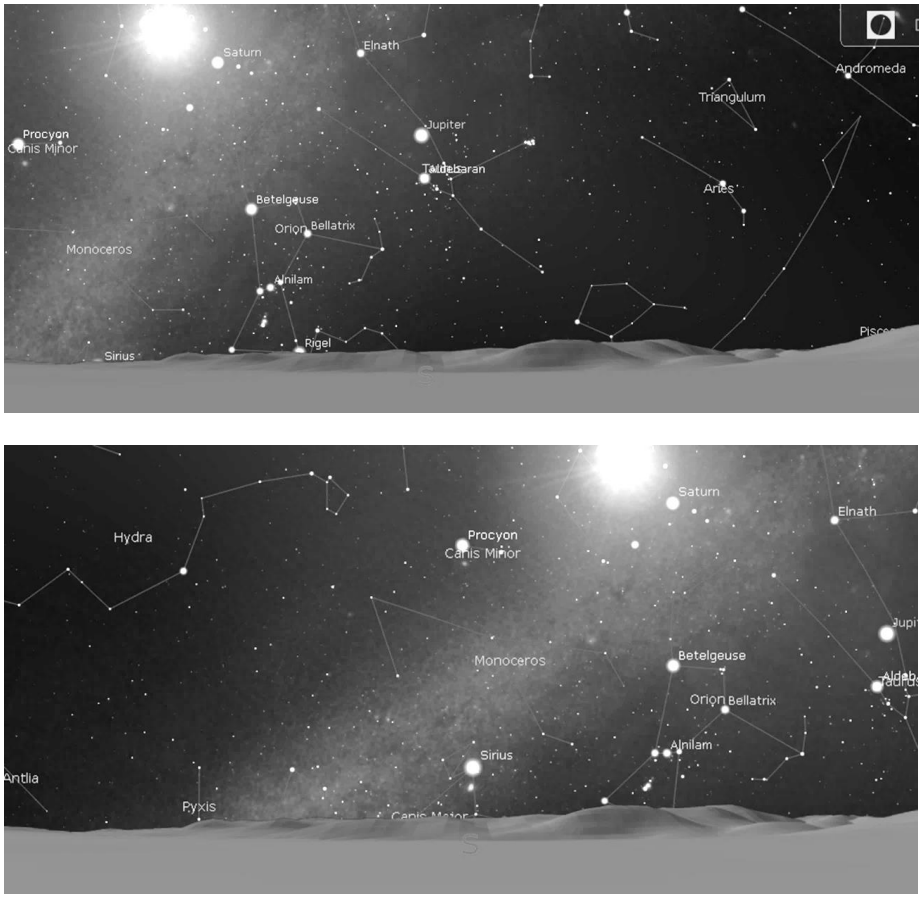
South-eastern entrance 148°–175° frames the rising of Gacrux 155° c.4000BC

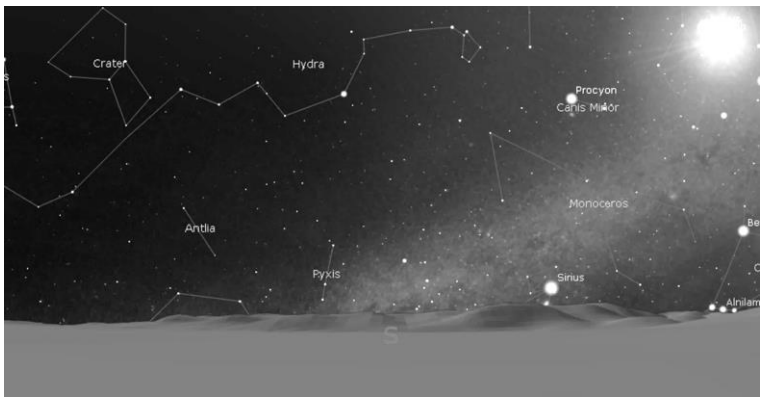


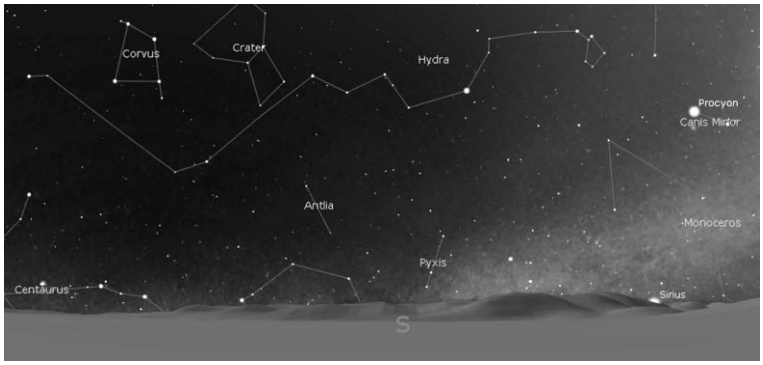
Gacrux sets on Yeavering bell peak at 196°



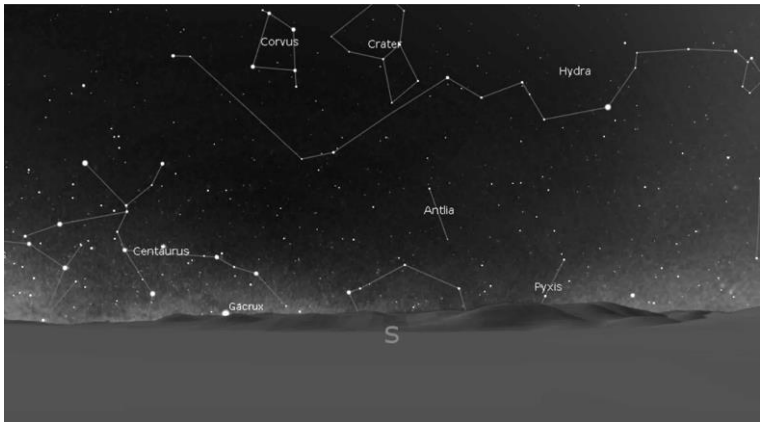
Yeavering Bell 209°–215: Sirius rolls down the hill to its west c.3800 BC

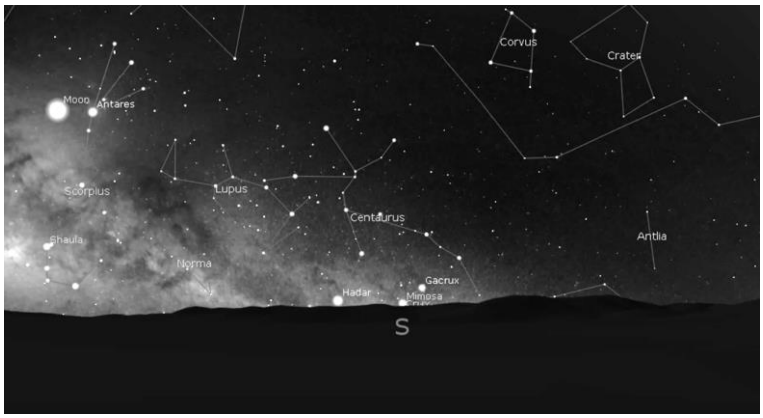


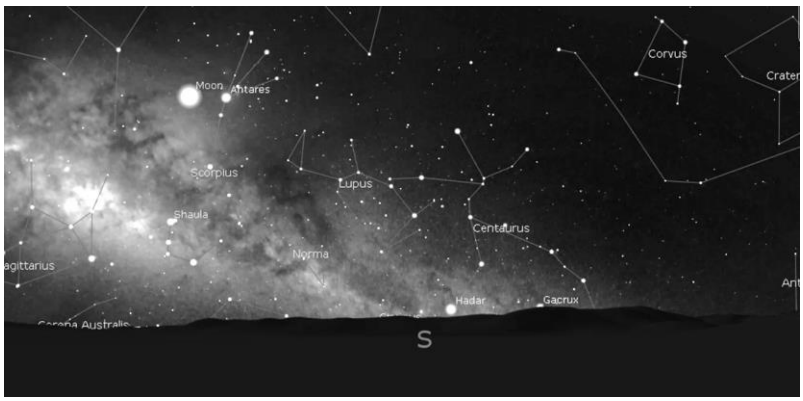




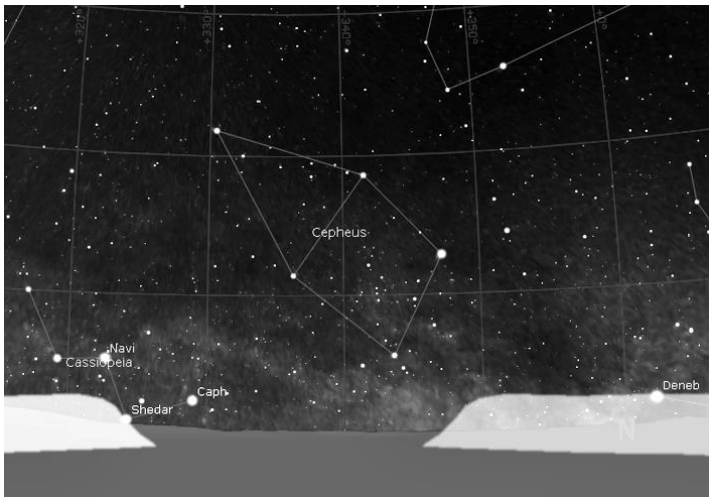
Orion and Sirius rising and setting over Yeavering Bell c.3800 BC

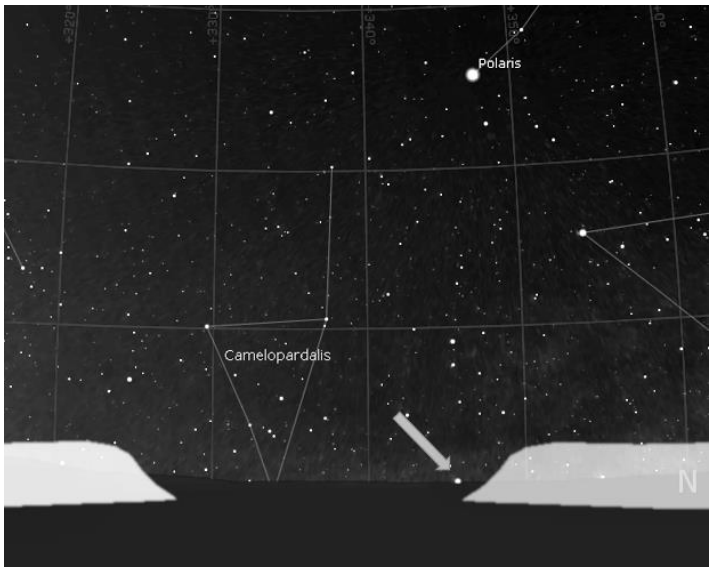






The rising and setting of Crux over Yeavering Bell

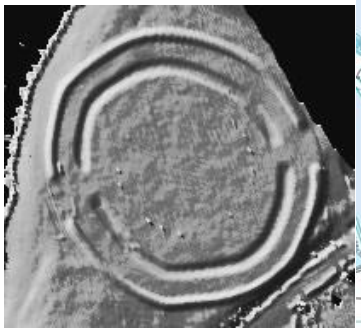


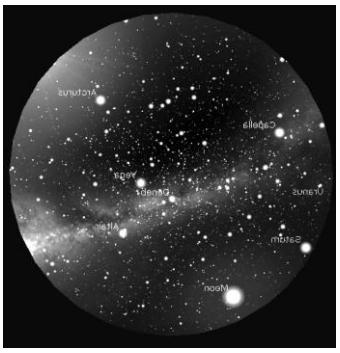


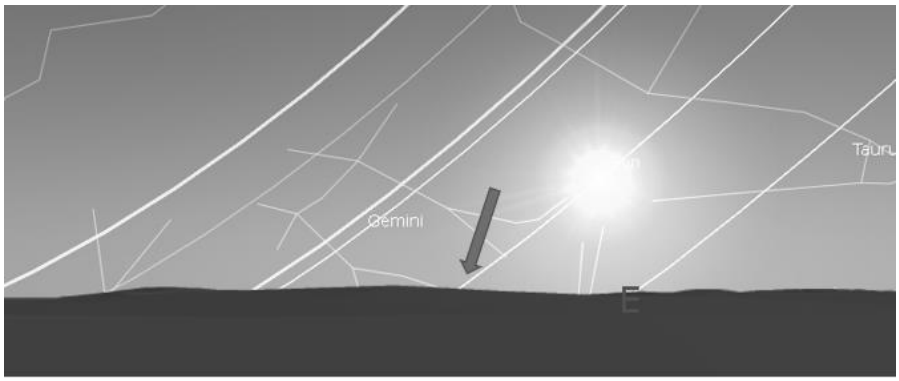
North-western entrance 325°–348: setting point of Shedar at 325° and Segin at 345° c.3800 BC

Devil's Quoits (Oxfordshire)

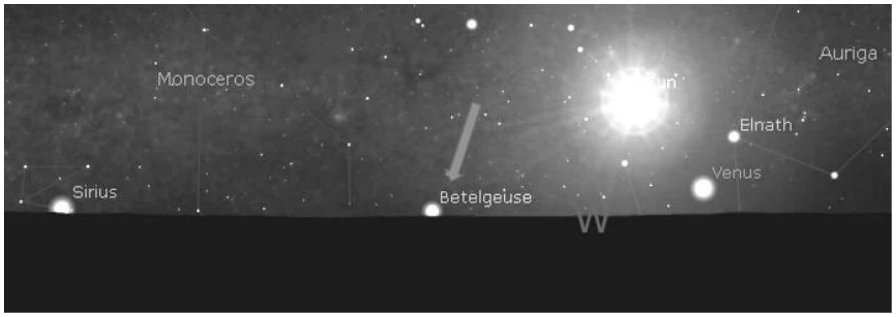
2900-2600 BC (henge ditch 2882-2147 BC)



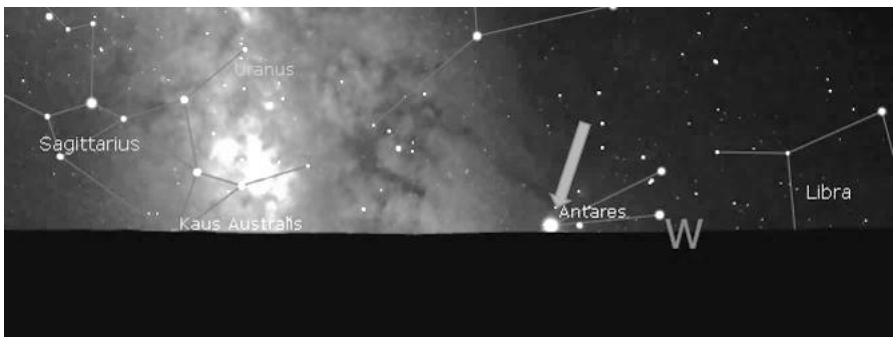




Eastern entrance 75°; sunrise in Orion Point around May day

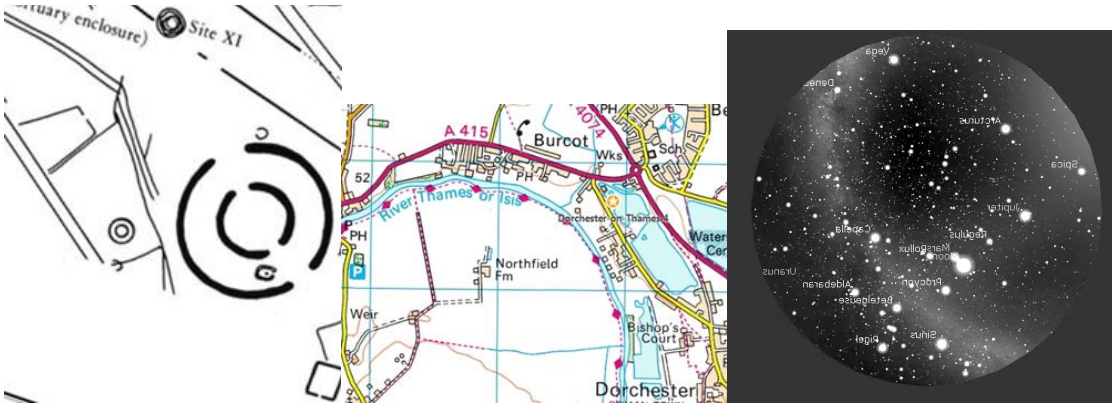


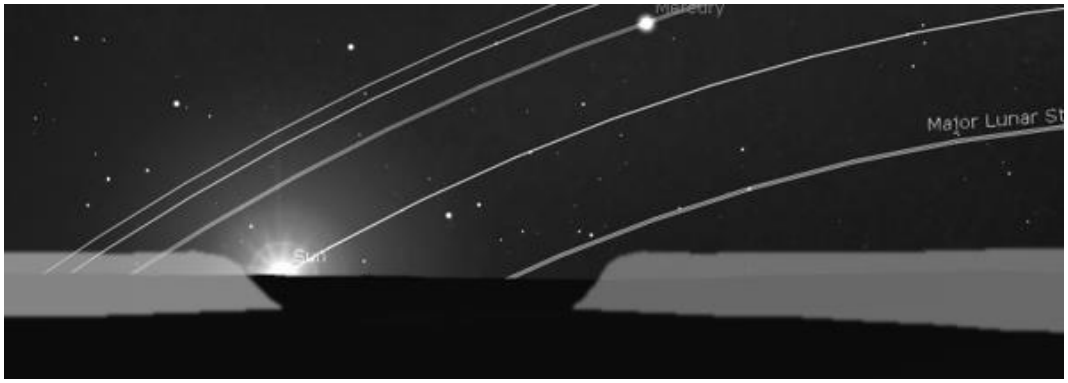
Western entrance 255°–265°: setting of Betelgeuse at 258° (above) and Antares at 262° (below) c.2600 BC



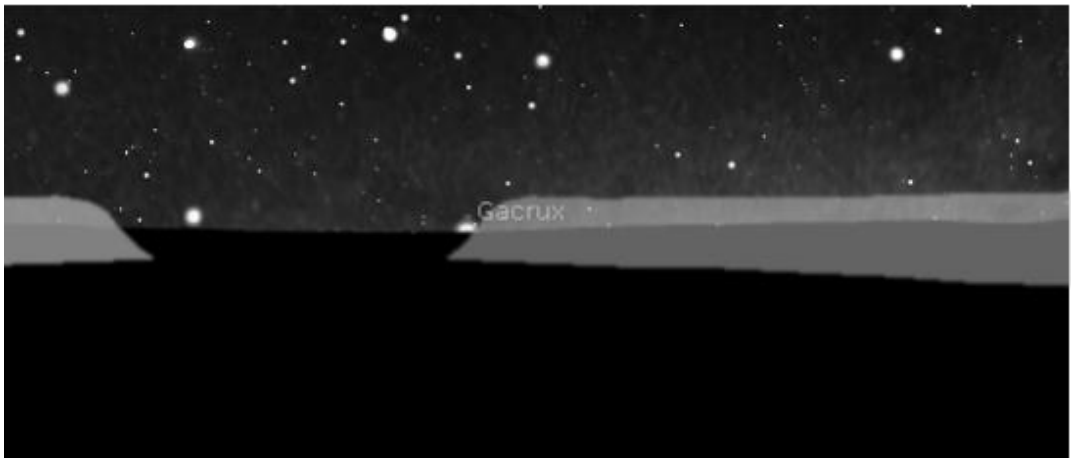
Dorchester on Thames (Oxfordshire)

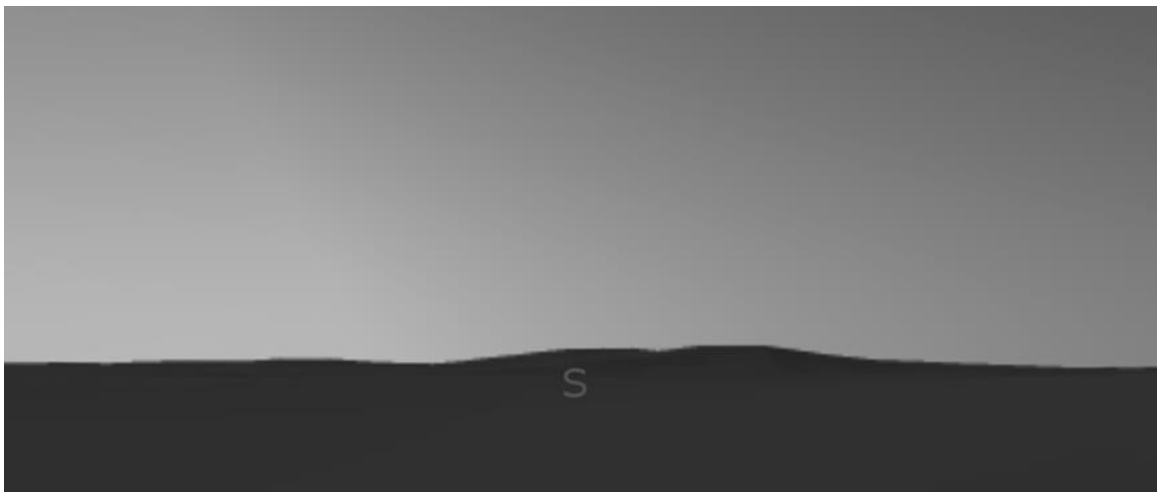
(post circle 2898–2147 BC and 2915–2206 BC)



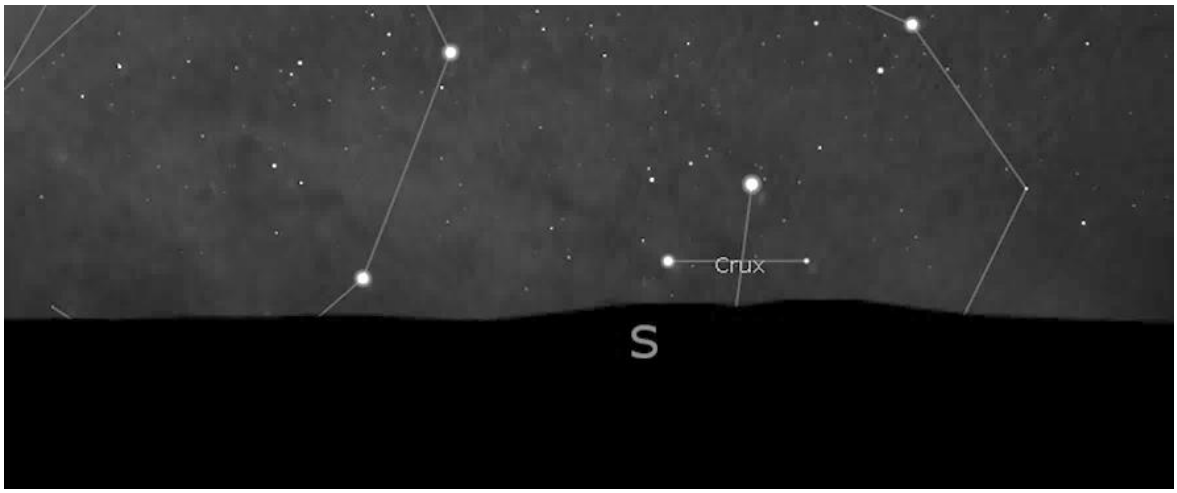


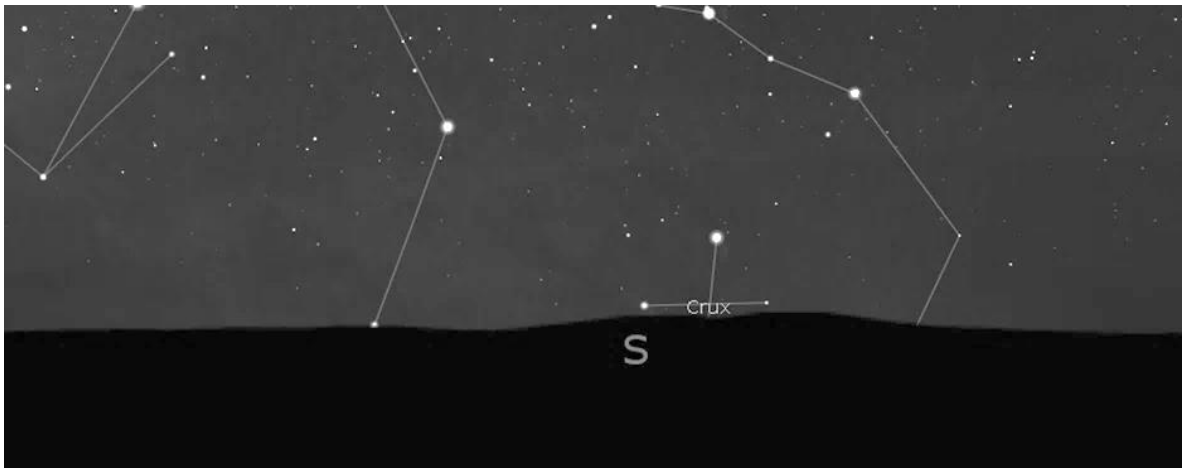
South-eastern entrance 131°–153°: Midwinter sunrise at 132° (above) and rising of Gacrux at 153° (below) c. 2500 BC

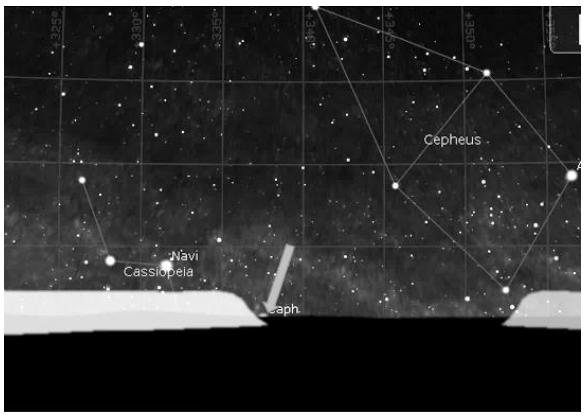


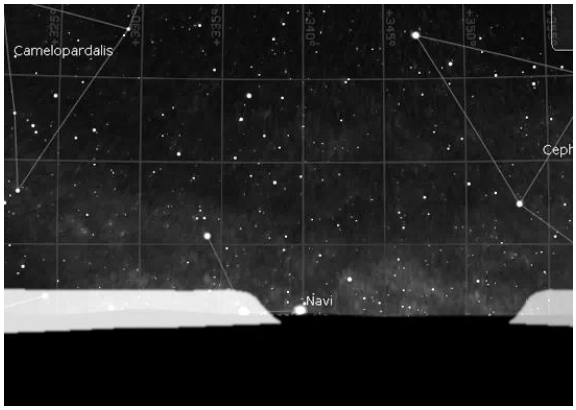


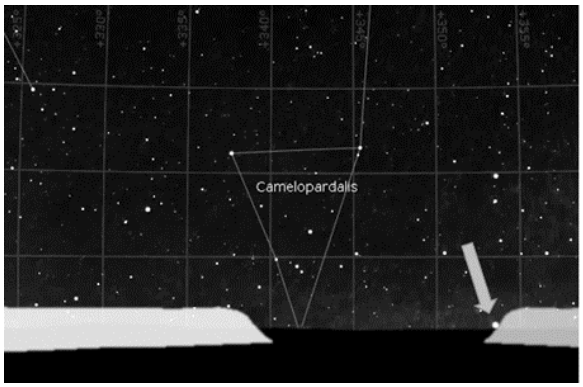
The south-eastern entrance points towards Wittenham clumps double hill (above); this defines the position of Crux as shown below in 2500 BC (middle) and 2270 BC (bottom)





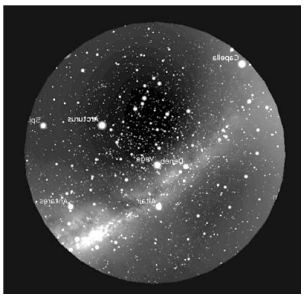


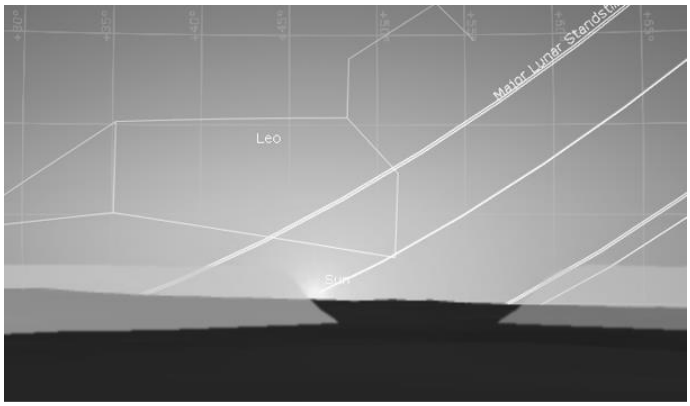




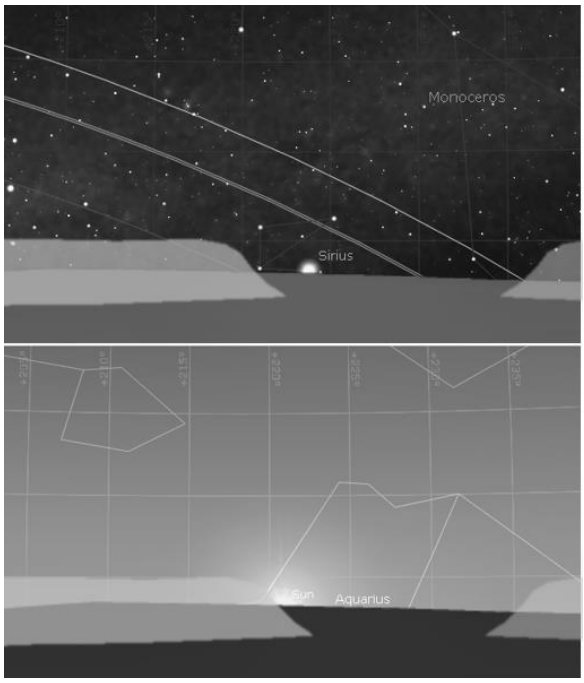
Northern entrance 338°–353° defined by setting points of Caph, Navi and Segin c.2500 BC

Dowth henge (County Meath)



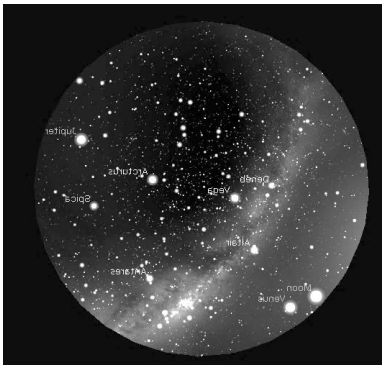


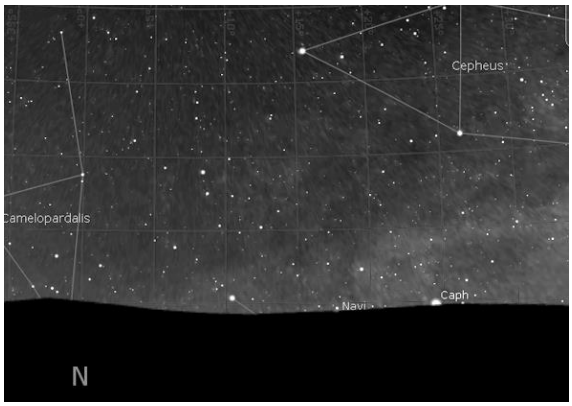
North-eastern entrance 45°–60° frames the midsummer sunrise



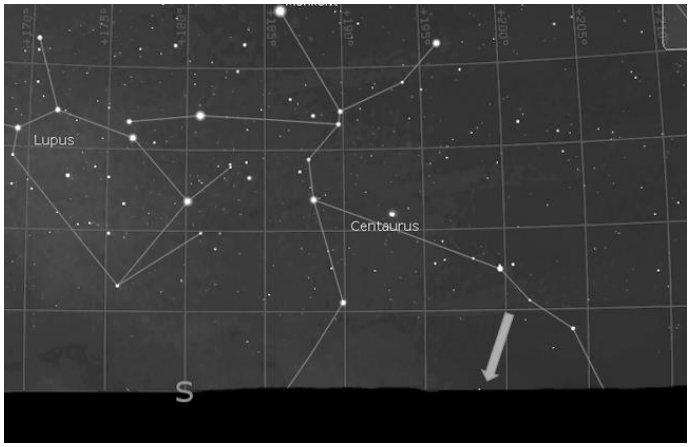
South-western entrance 222°–236°: this frames the setting of Sirius c. 3000 BC and the midwinter sunset.

Dunragit (Dumfries and Galloway)





The alignment of the timber avenue at 19° aligns with the rising of Caph c.2400 BC

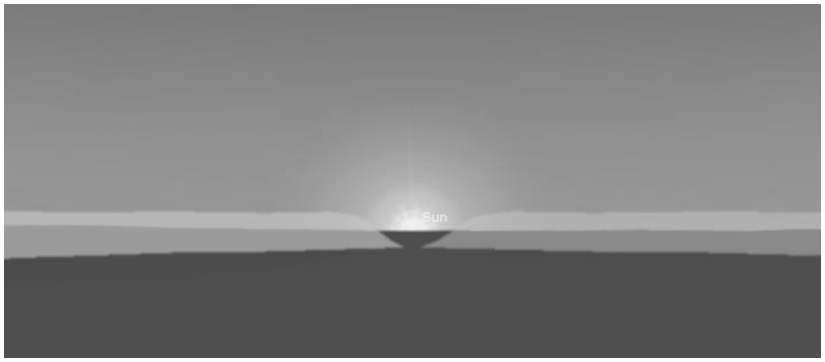


The timber avenue aligns with Dunragit mound at 198°, pointing to the setting of Gacrux c.2500 BC

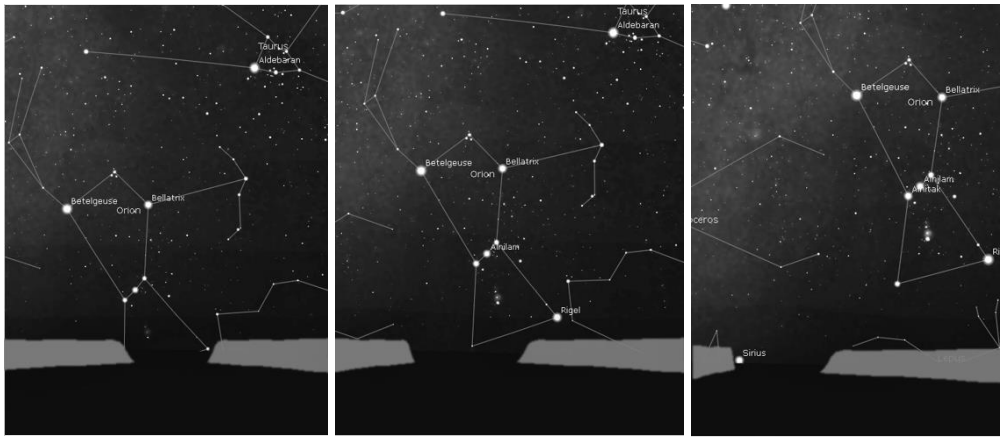
Durrington Walls (Wiltshire)

(Henge ditch s entrance 2617–2304 BC)

Although it doesn't respect the wider flow of the Avon (NE-SW) the orientation of Durrington Walls mirrors that of the meander of the river leading to and from the site. As Sirius rises at E entrance



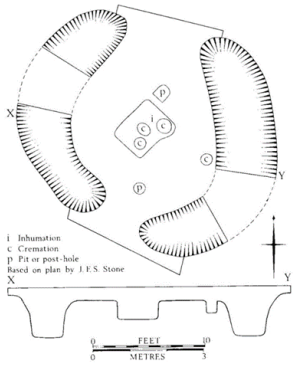
North-western entrance at 303°–307° aligns with the setting of the midsummer sun

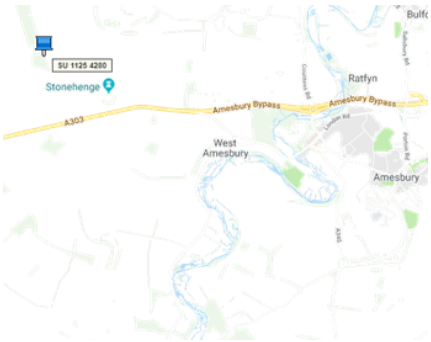


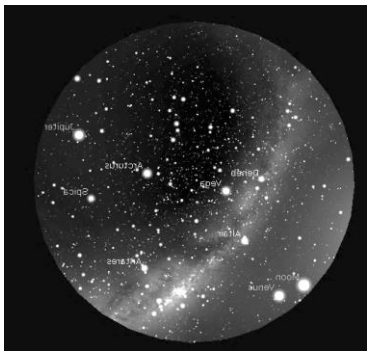
South-eastern entrance 120°–128° frames the rising of Rigel and Sirius

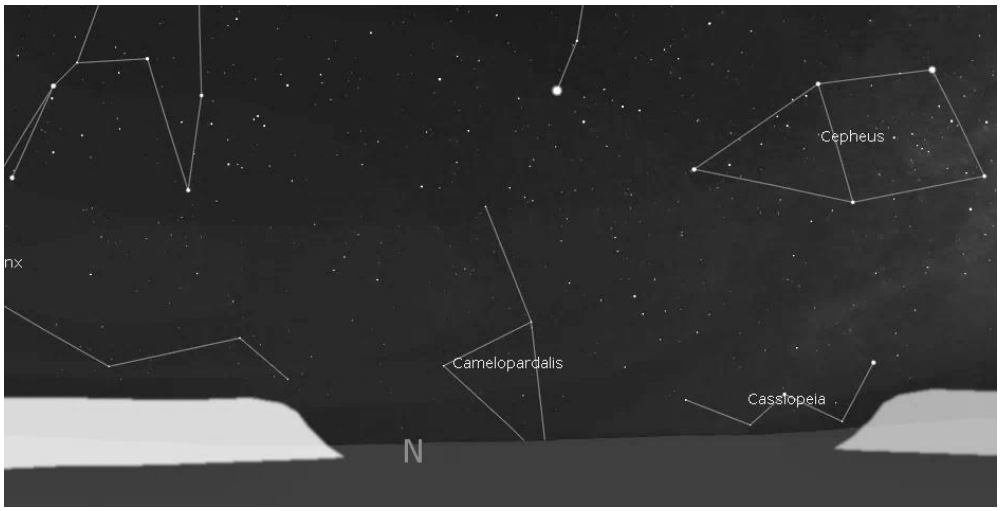
Fargo plantation henge (Wiltshire)

2600 BC

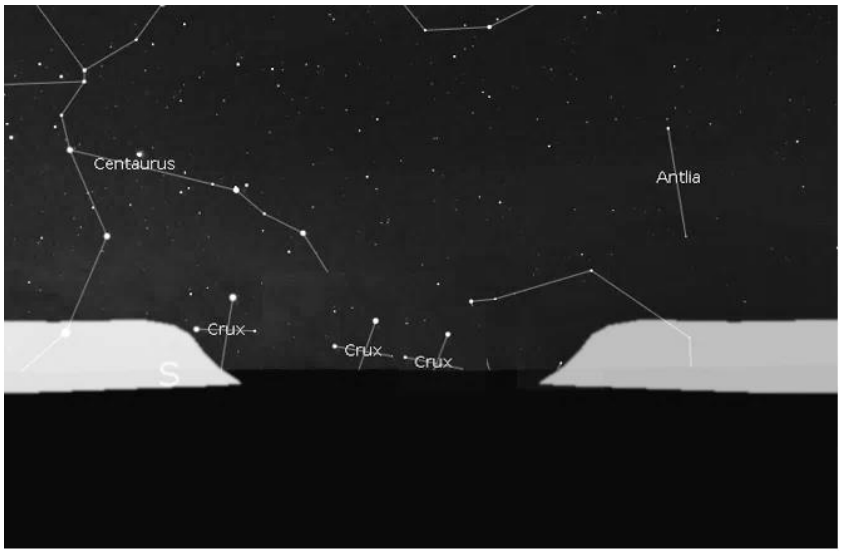






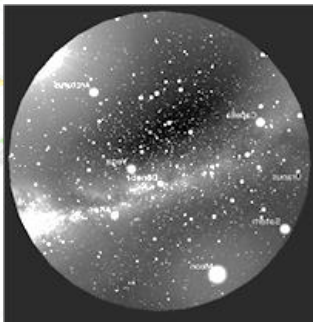


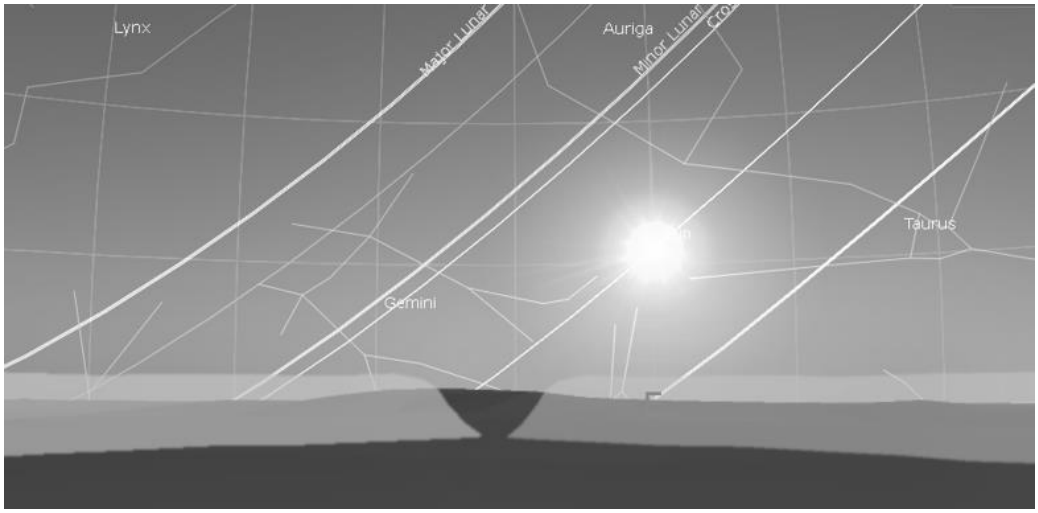
Northern entrance 182°–208°: Cassiopeia sits on horizon, rising, as Hadar sets to the south and the Milky Way aligns with both entrances



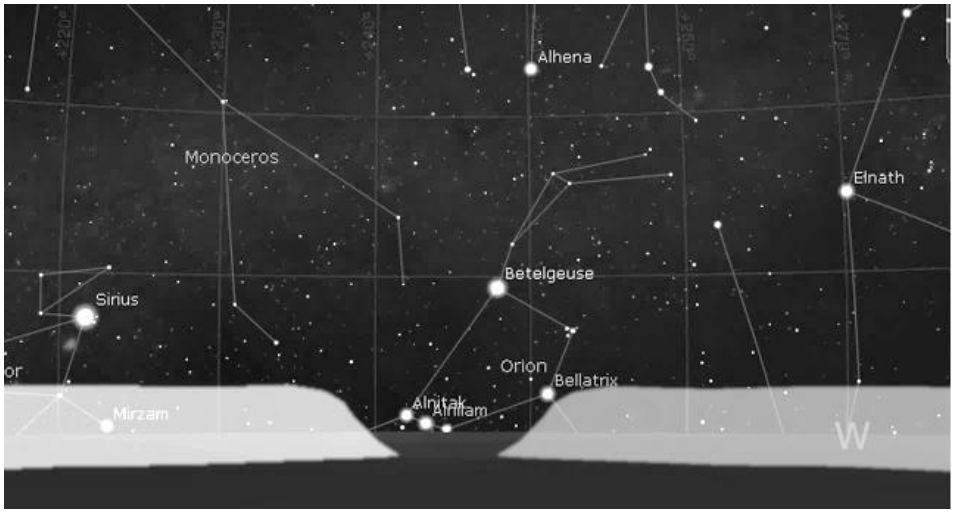
South-western entrance 352°–035°: setting of Crux

Figsbury Ring (Wiltshire)



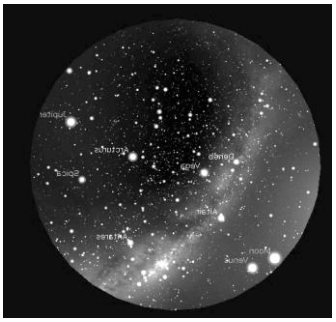


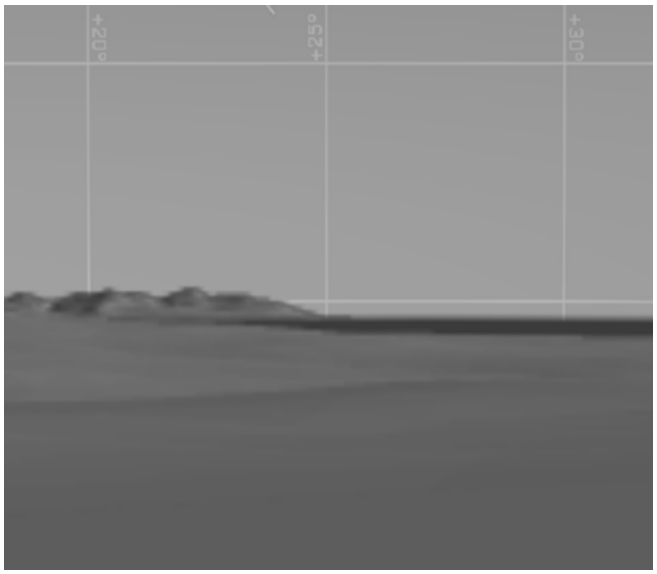
Eastern entrance 76°–82°: rising of May Day sun in Orion Point over a hill to the north-east



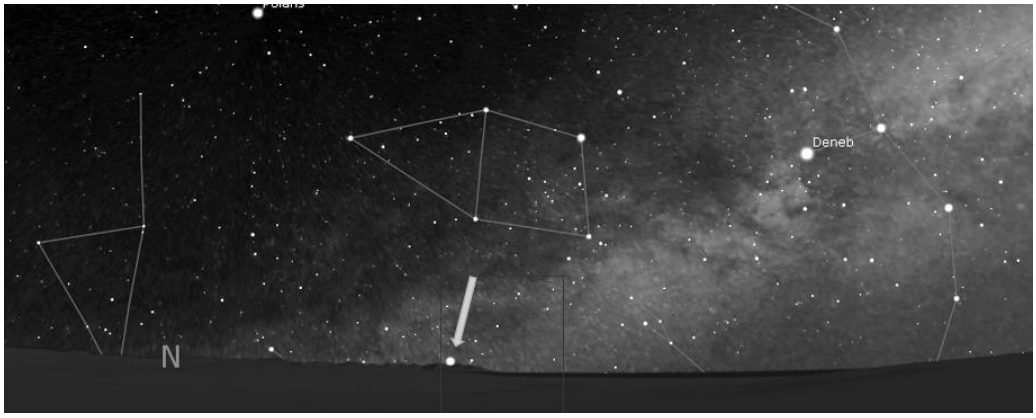
Western entrance 238°–250°: setting of Orion's belt at 242°–245°

Fourknocks (County Meath)





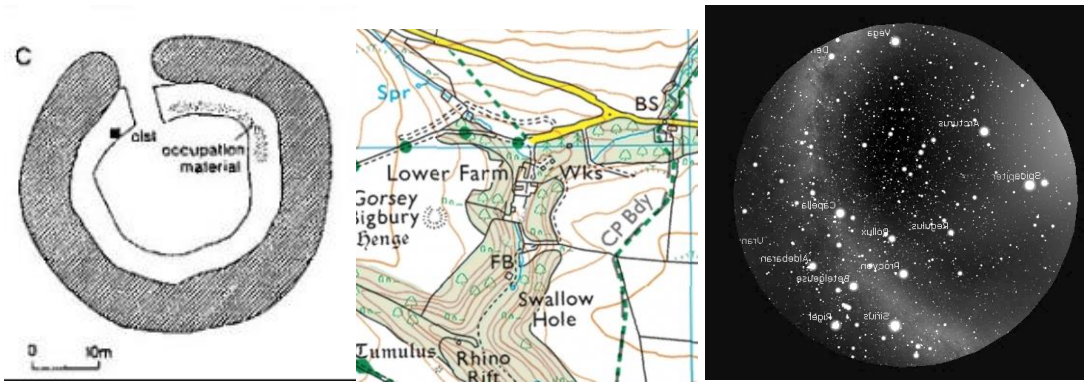
North-eastern entrance 20°–28° points towards the mountains and the sea



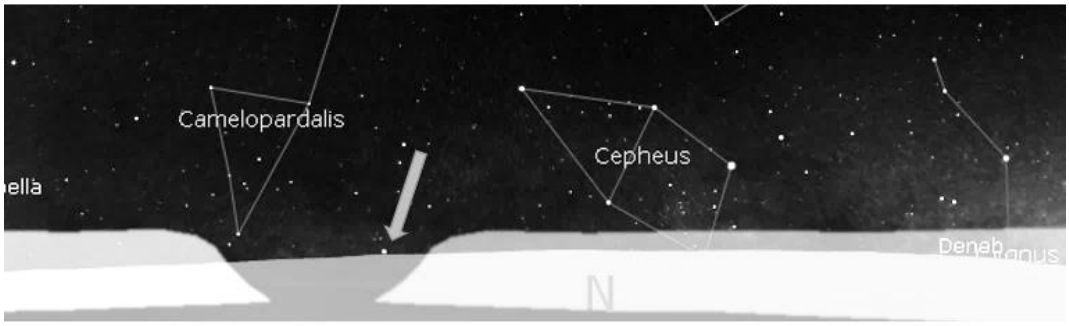
The rising of Caph in Cassiopeia over the mountains as viewed from the chamber c. 3000 BC

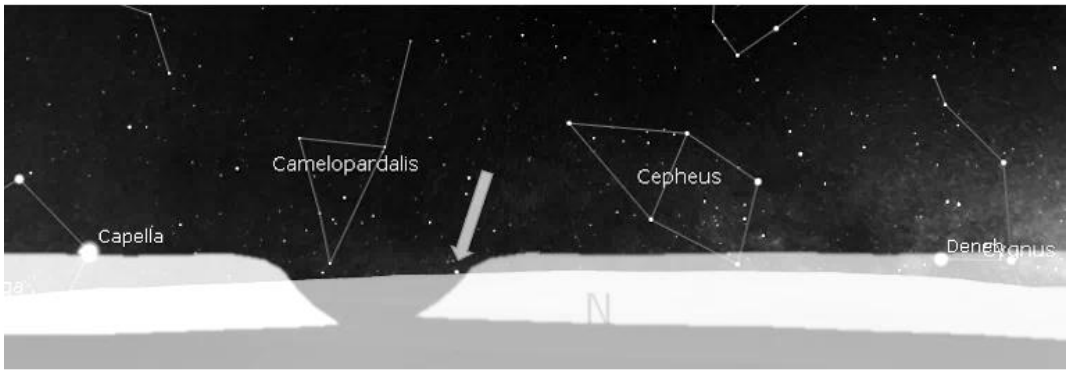
The setting of Crux at the same times, as one enters the chamber looking southwards c.3000 BC:

Gorsey Bigbury (Somerset)

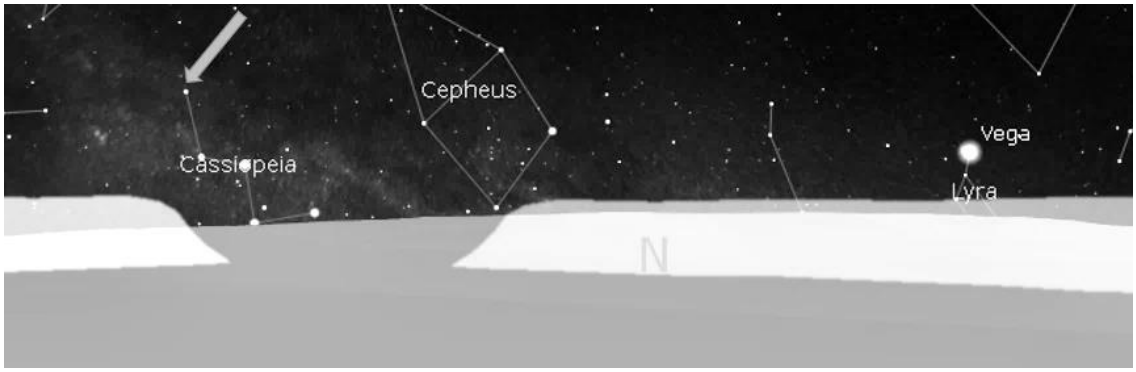


(2466 – 1982 BC lower ditch fill, charcoal)



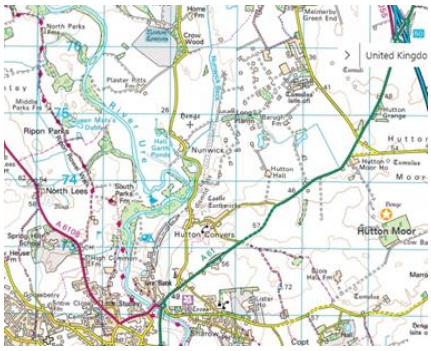


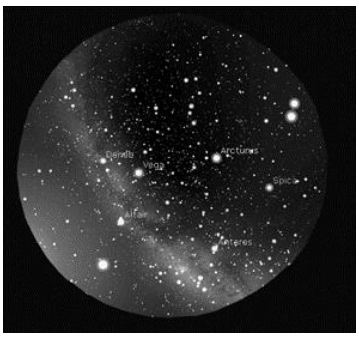
Northern entrance 332°–346°: 2400 BC setting of Segin 341°; 2200 BC setting of Segin 346°

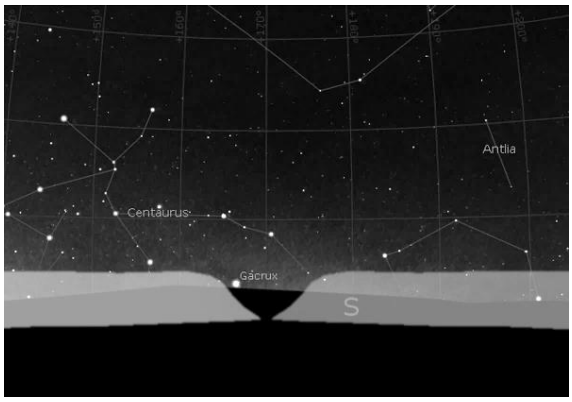


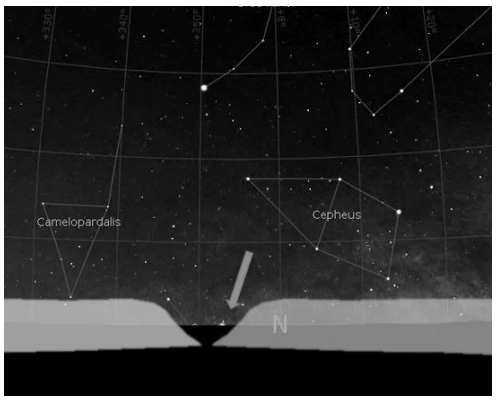
Setting of Cassiopeia 2300 BC through N entrance (arrow on Segin)

Hutton Moor (North Yorkshire)



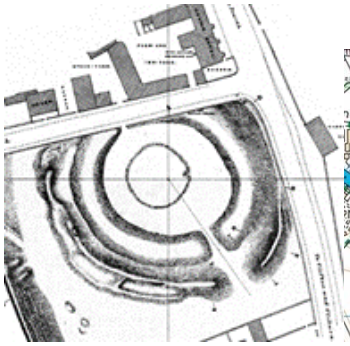


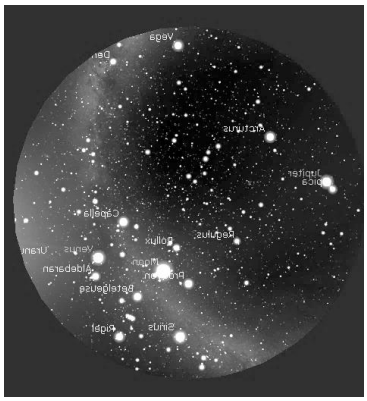




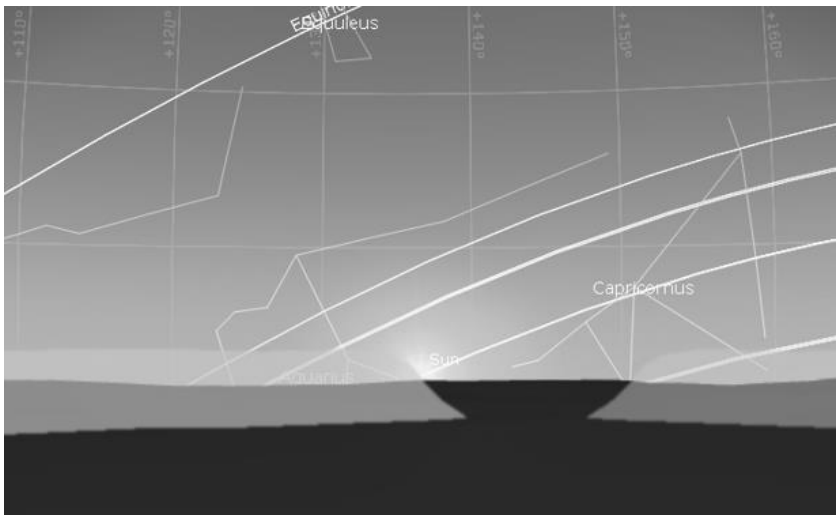
Southern entrance 164°–174° frames the rising of Gacrux (left); Northern entrance 344°–354° frames the setting of Navi at the same time (right)

King Arthur's Round Table (Cumbria)



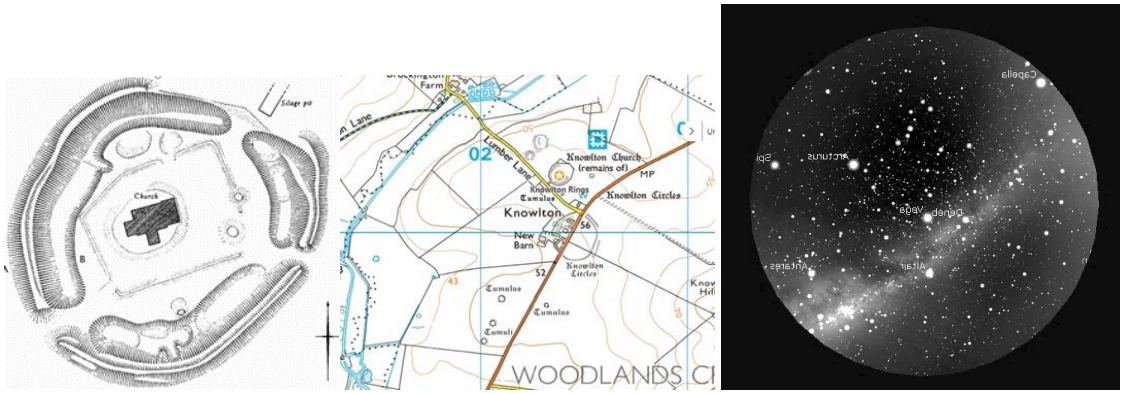


c. 2000 BC

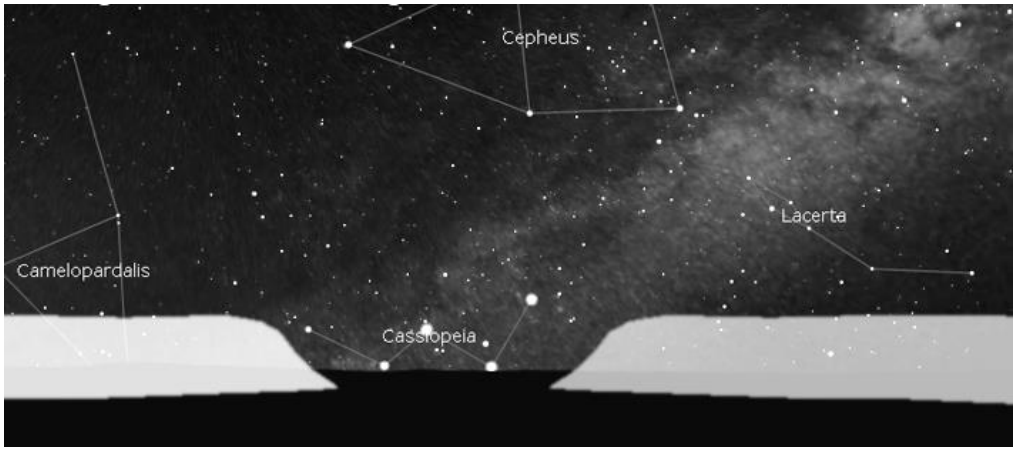


South-eastern entrance 136°–150°: defines the midwinter sunrise at 136°

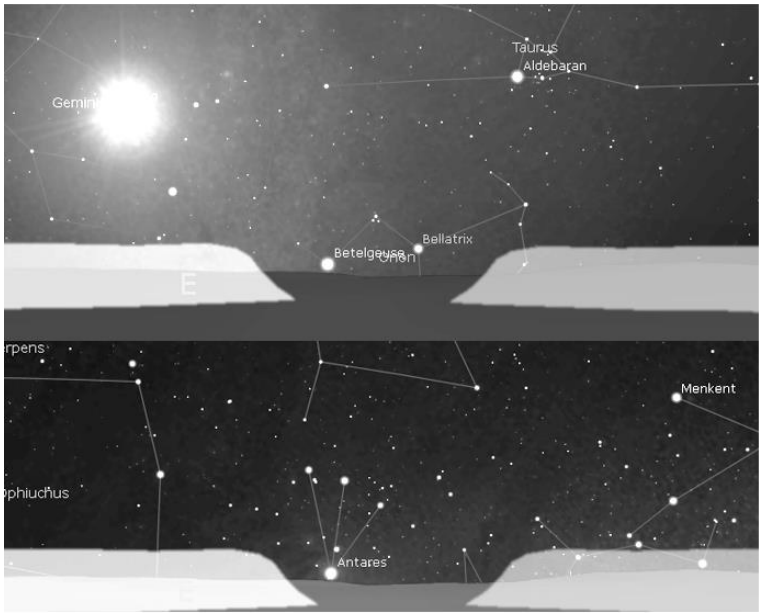
Knowlton (Dorset)



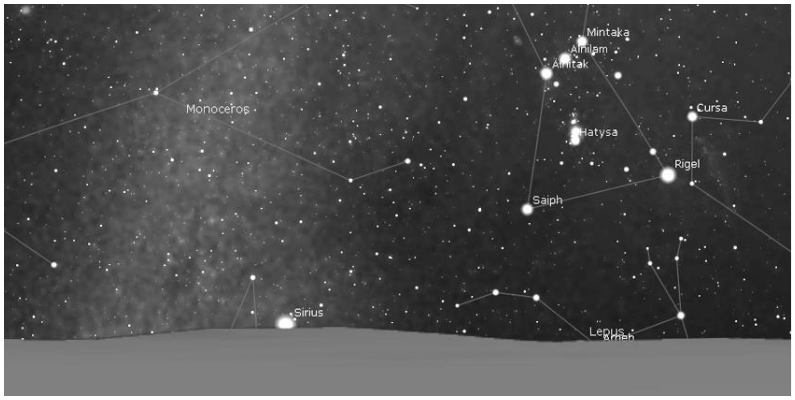
3000-2000 BC



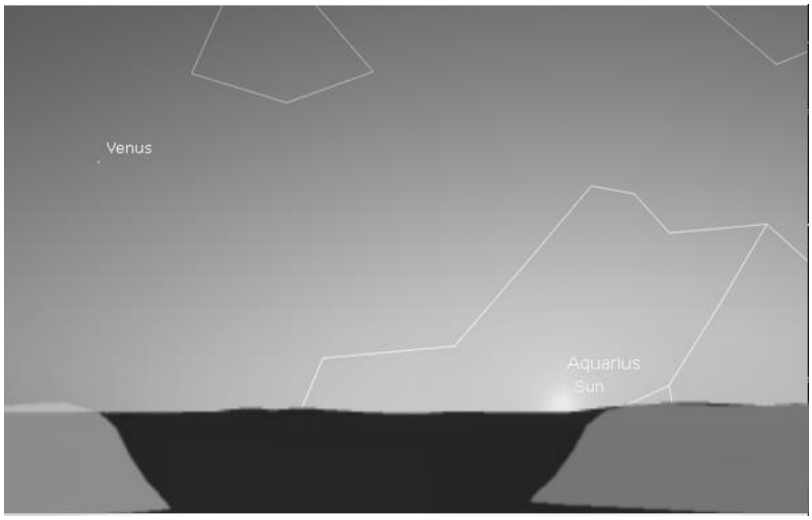
North-eastern entrance 20°–40° frames the rising of Cassiopeia c 2600 BC



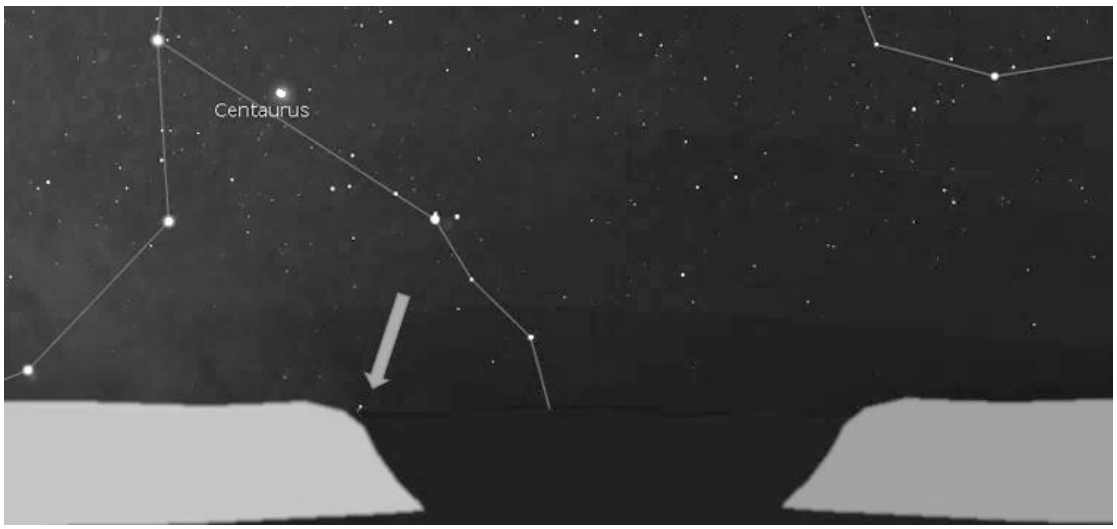
South-eastern entrance 95°–105° frames the rising of Betelgeuse (top) and Antares (bottom) c.2600 BC



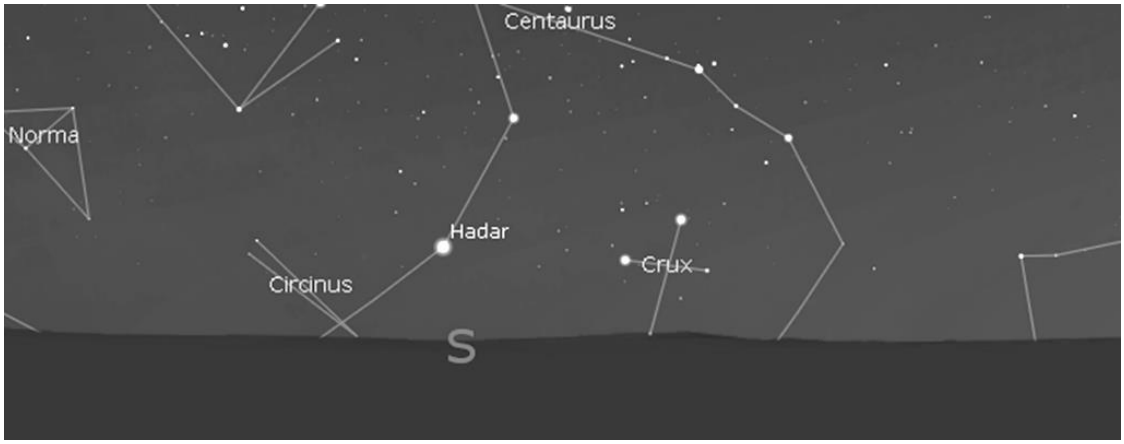
double hills at 126/7° define the rising point of Sirius c 2600 BC



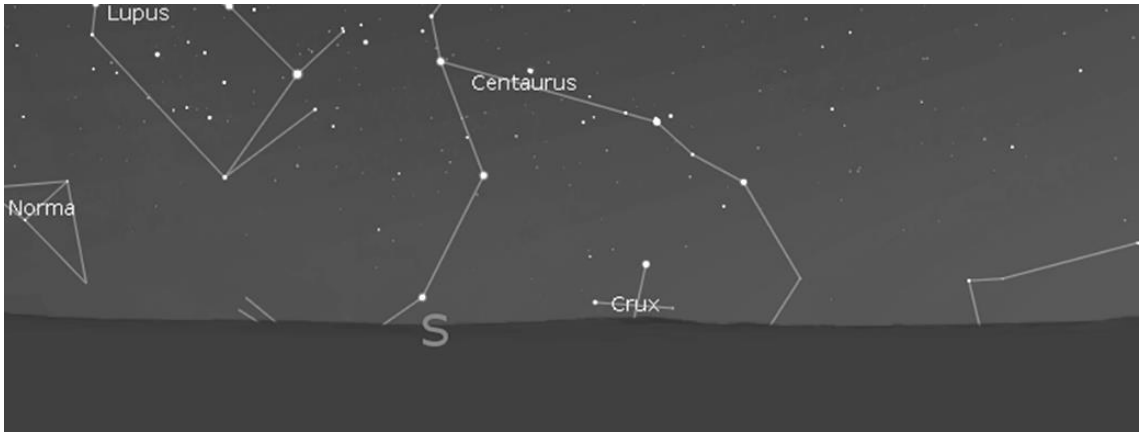
South-western entrance 210°–230° (220° blocking) frames the midwinter sunset at 230°



South-eastern entrance 210°–230°: Setting of Gacrux at 214° c. 2900 BC and setting of Gacrux at 210° c. 2600 BC; by 2200 BC Gacrux sets at 206° and hence is lost from view.

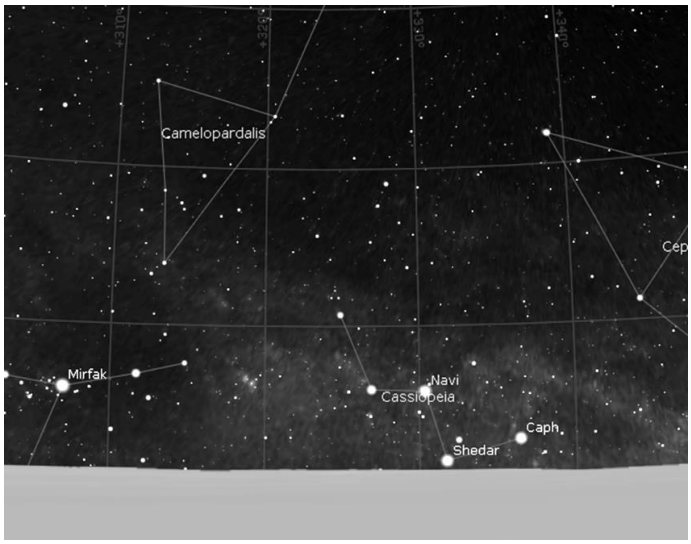


Setting point of Acrux c 2900 BC (above) and 2200 BC (below) over double hills to the south, visible over the henge bank



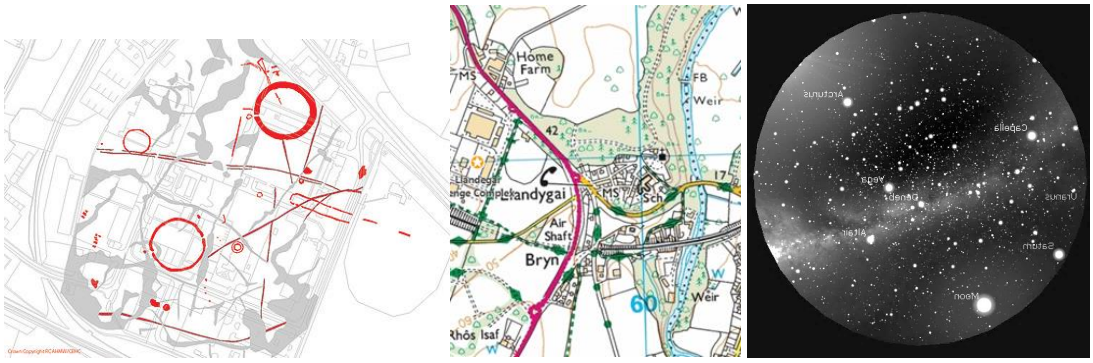
Little Argham (North Yorkshire)

(source: http://www.stone-circles.org.uk/stone/littleargham.htm)



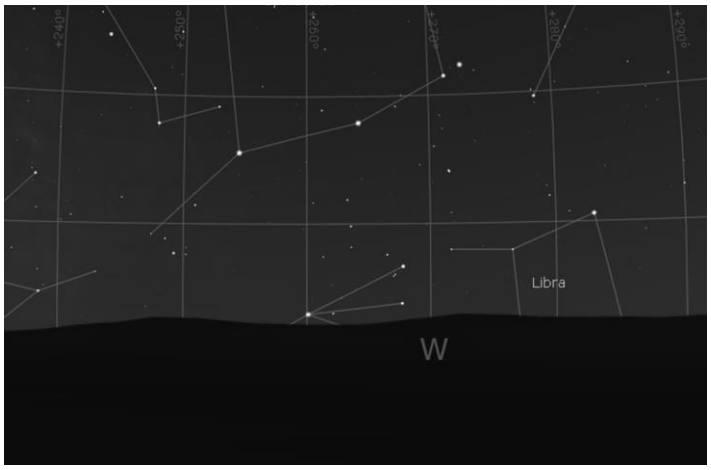
Northern entrance 302°–331°: setting of Shedar at 331° c. 2700 BC

Llandegai A (Caernarfonshire)

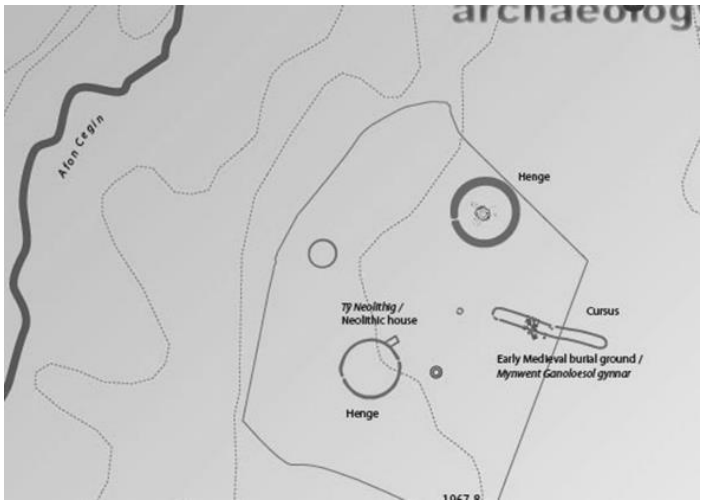


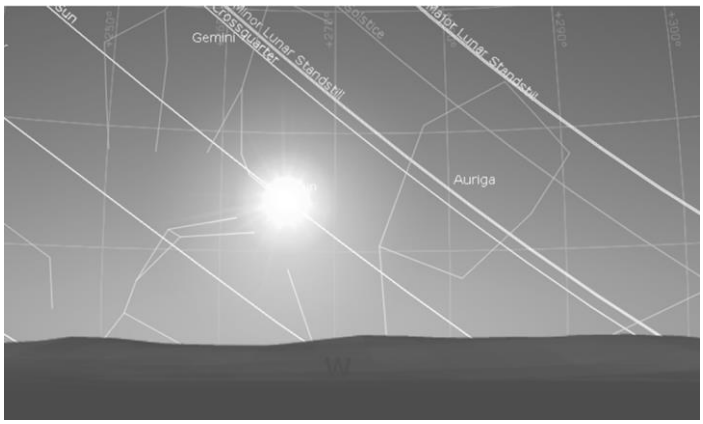
cremation burial of an adult woman dating to 3370–2930 cal BC;

(GrA-22954; 4480 +– 50 BP; Lynch & Musson 2004: 44–6, 118).



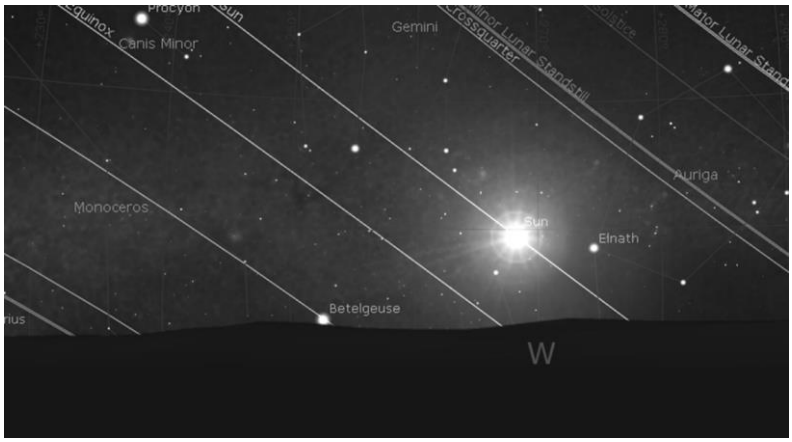
South-western entrance 259°–261°: setting of Antares c.3000BC



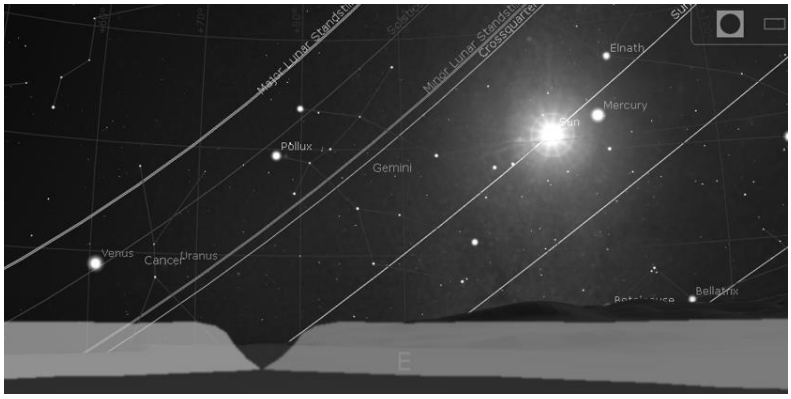


Cursus at 285° aligns with the Orion Point sunset in late April

Llandegai B (Caernarfonshire)



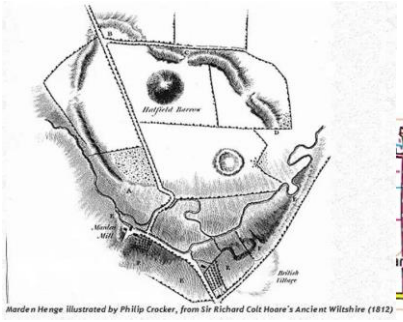
South-western entrance 253°–257°: setting of Betelgeuse 3100 BC

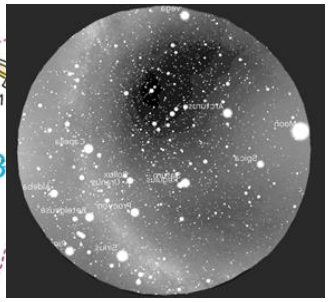


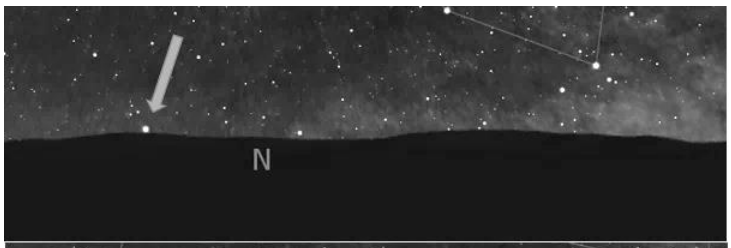
Eastern entrance 75°–79°: Orion Point at 78°, also defined by the edge of the distant mountains

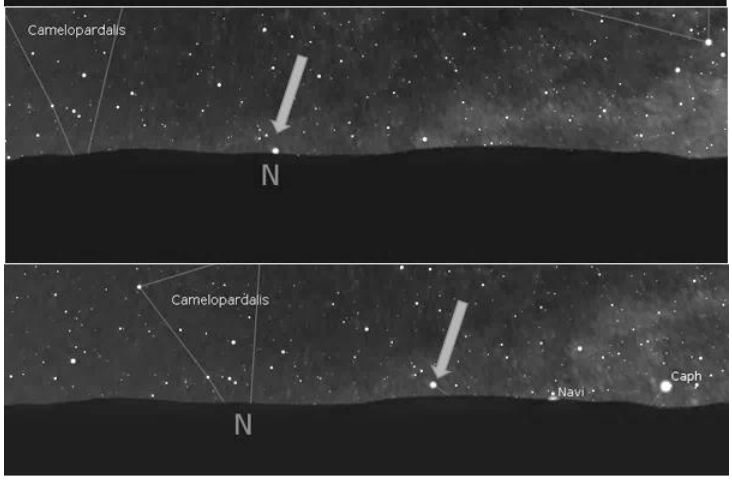
Marden (Wiltshire)

2580-2280 BC (2571 –2291 BC N entrance henge ditch charcoal)



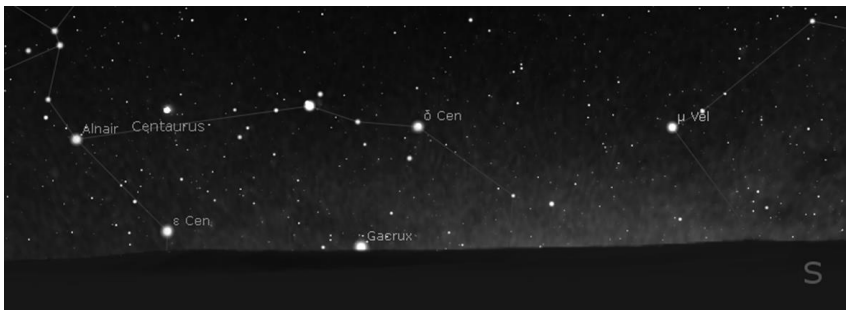




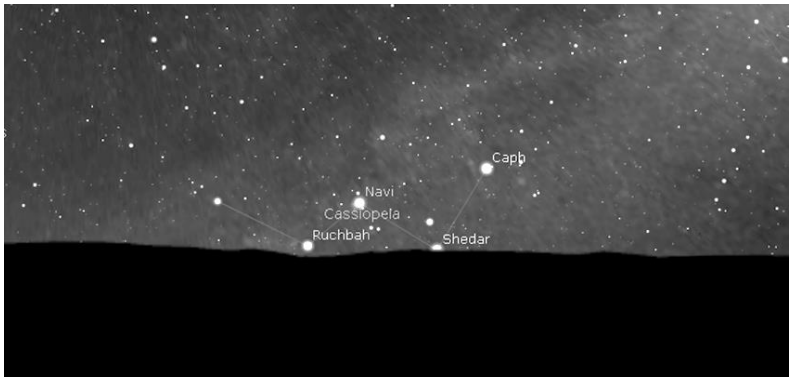


Northern entrance is 14°–18°, but the peaks of Tan and Milk Hill would have been visible over the banks in this general direction: Segin rolls over Tan Hill at 353° and Milk Hill at 12°

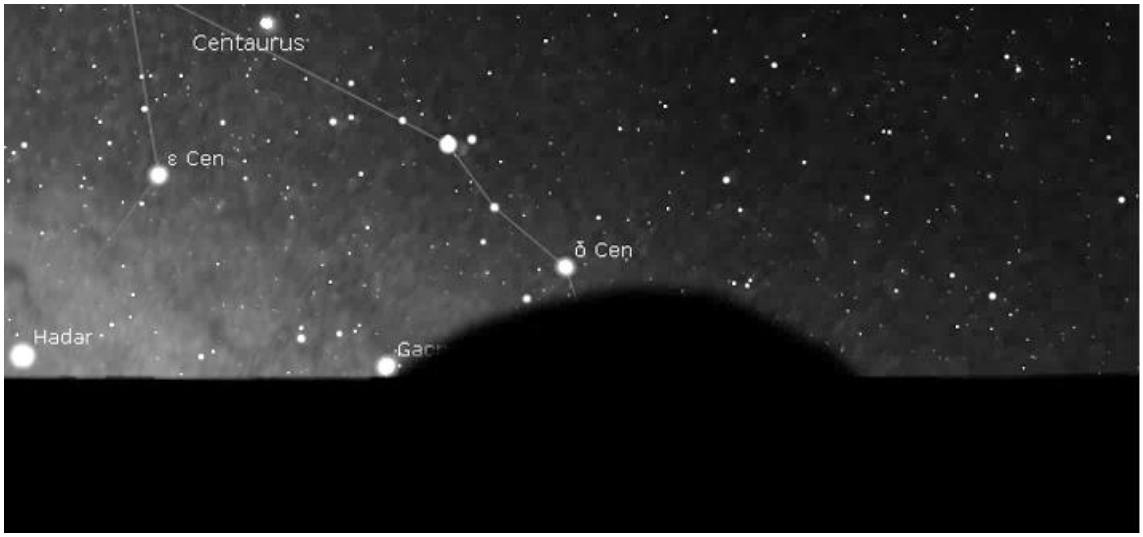
Eastern entrance 69°–85°: this frames the sun rising in the Orion point around May Day c. 2500 BC at 75° as viewed from Hatfield barrow



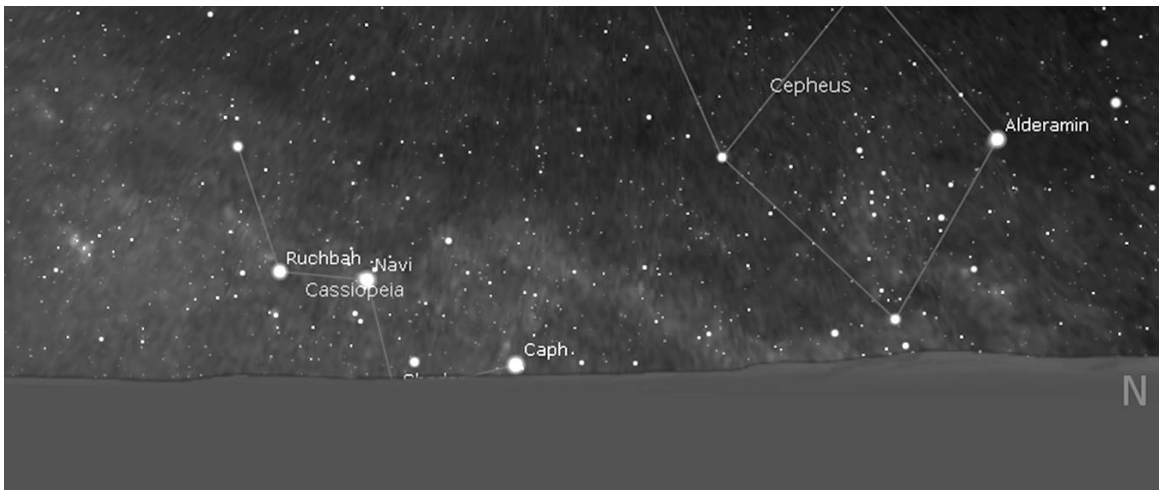
South-eastern entrance 155°–162°: this frames the rising of Gacrux 155° from west of the barrow



North-eastern entrance Rising of Shedar at 32° from tumulus over Hatfield Barrow

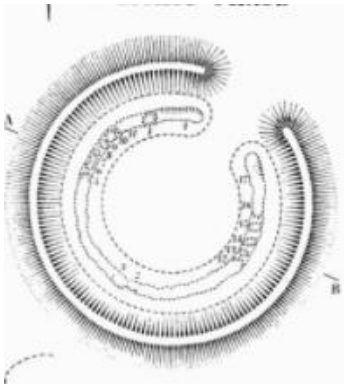


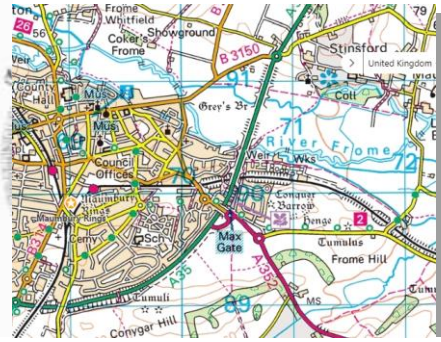
In opposite direction edge of tumulus is setting point of Gacrux (c.205 °)

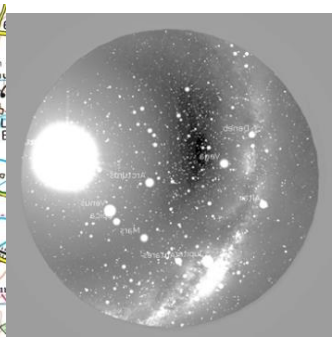


North-western entrance 337°–345° 337° setting of Caph

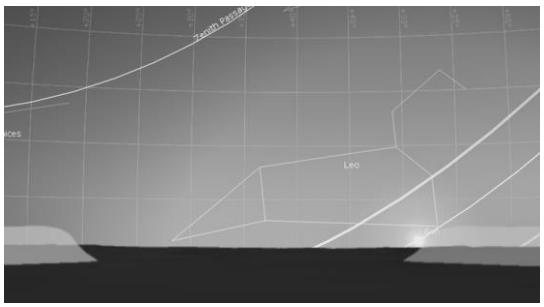
Maumbury Rings (Dorset)





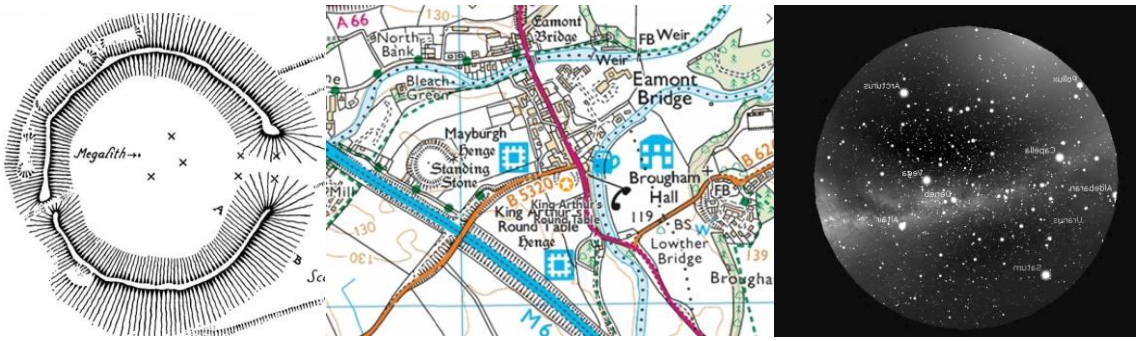


2500-2000 BC 2620–2300 BM-2282N or 2265–1780 BC (from antler in shaft)

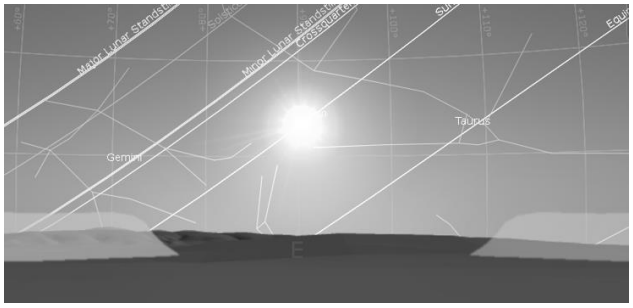


North-eastern entrance 20°–50° (15° to 55°) frames the Midsummer sunrise at 50°; Also defines rising of Cassiopeia

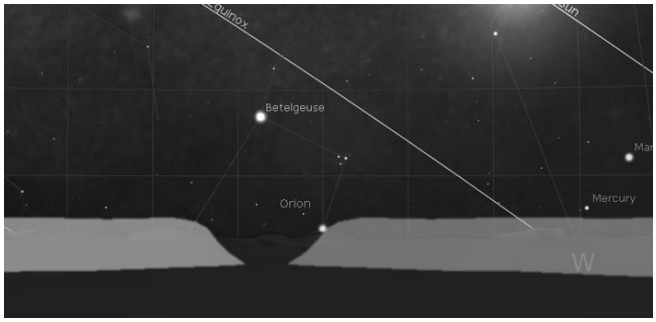
Mayburgh (Cumbria)



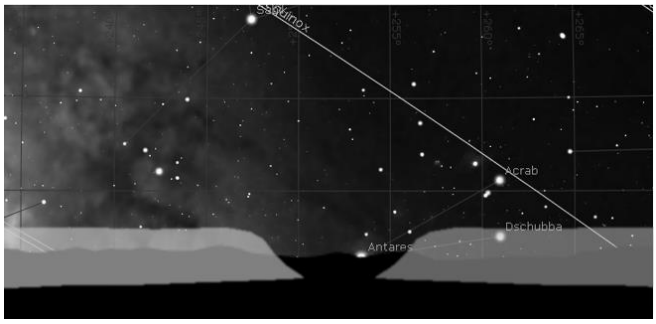
2500-2000BC



Eastern entrance 75°–110° defines the sunrise on May Day at the Orion Point (75°) c. 2250 BC

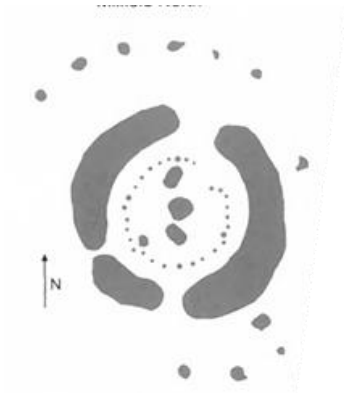


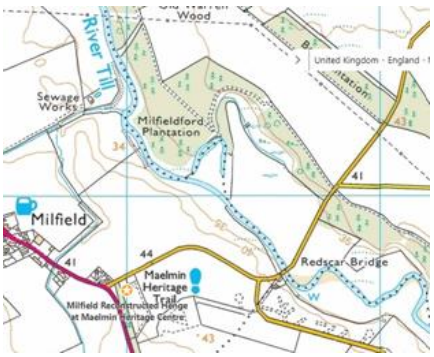
South-western entrance 248°–255°: Orion setting over Helvellyn twin hills at 255° c.2200 BC

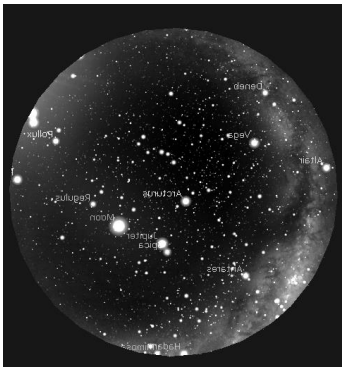


South-western entrance 248°–255°: Antares setting over Helvellyn's twin hills at 253° c..2200 BC

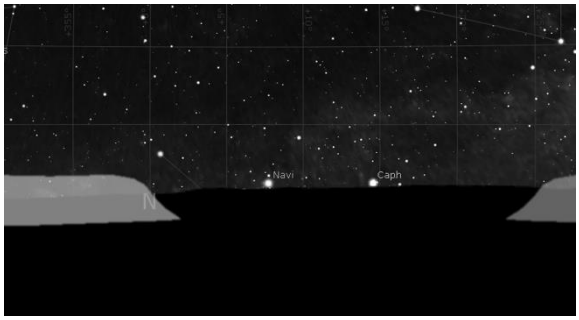
Millfield North (Northumberland)

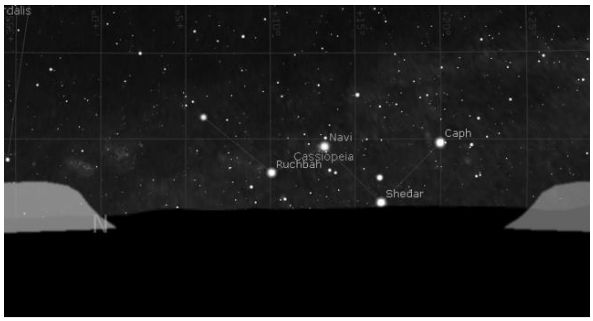




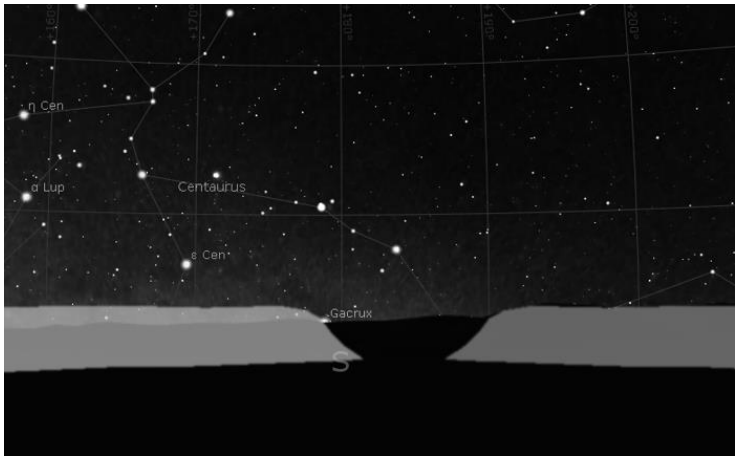


2900–2300 BC

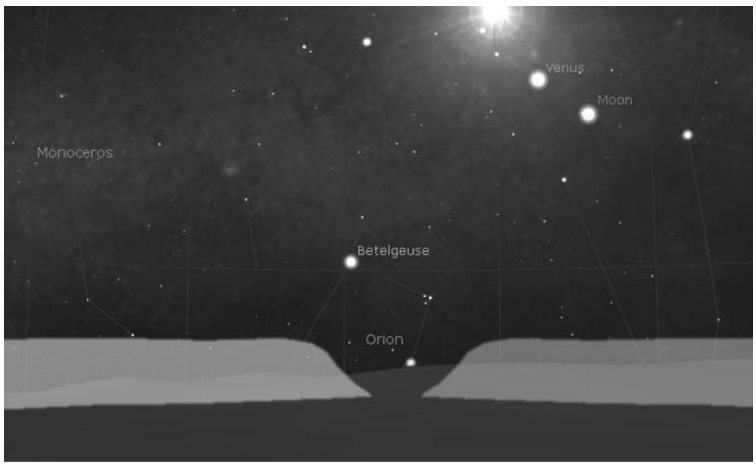




The northern entrance at 0°–26° defines: a) The rising of Caph ; b) the rising Shedar

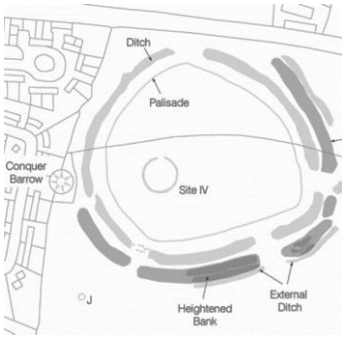


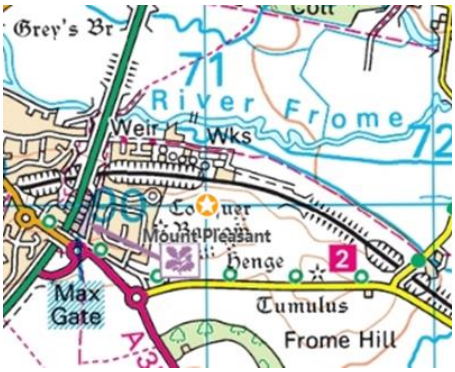
Southern entrance 177°–190°: aligns with the setting of Gacrux at 179° c.2800 BC

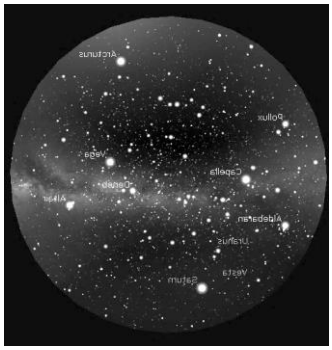


South-western entrance 240°–247° Setting of Bellatrix at 244° c.2800 BC

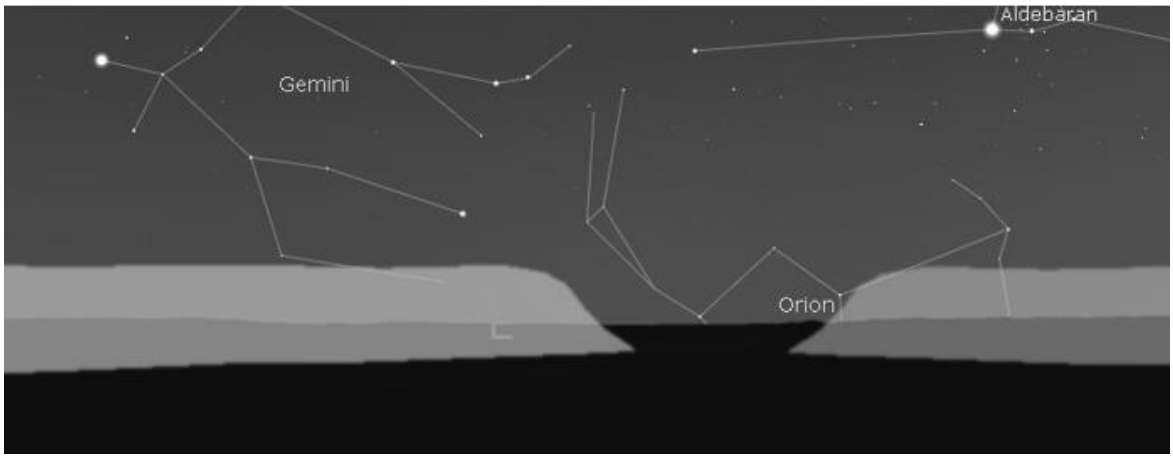
Mount Pleasant enclosure (Dorset)



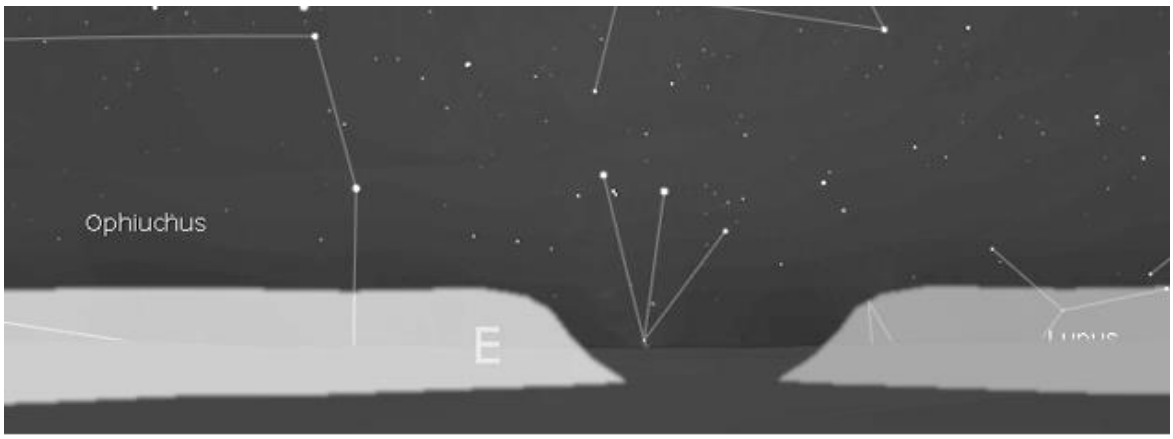




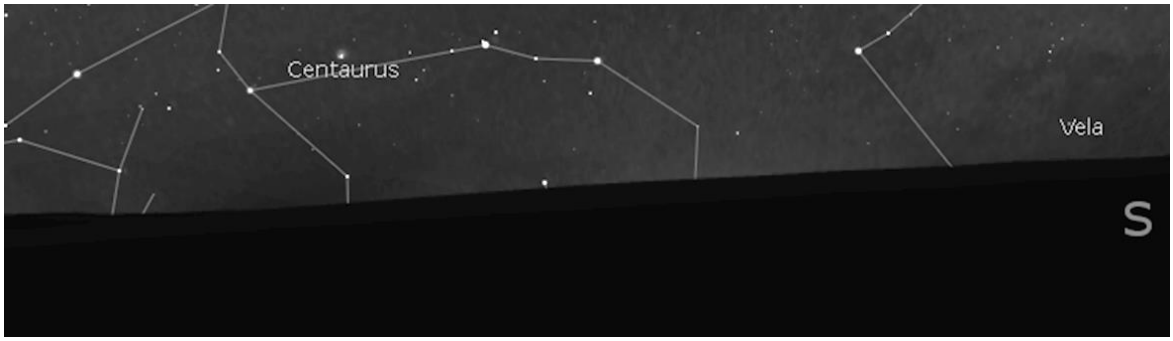
(2855–2469 BC)



Eastern entrance 95°–107° frames the rising of Betelgeuse c.2800 BC

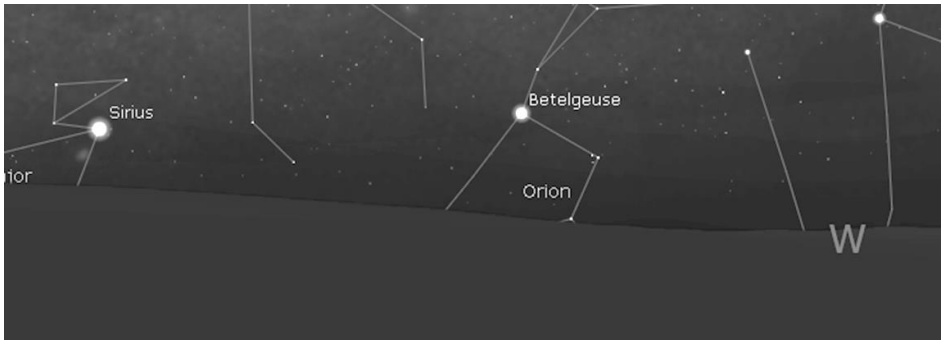


Eastern entrance 95°–107° frames the rising of Antares c.2800 BC

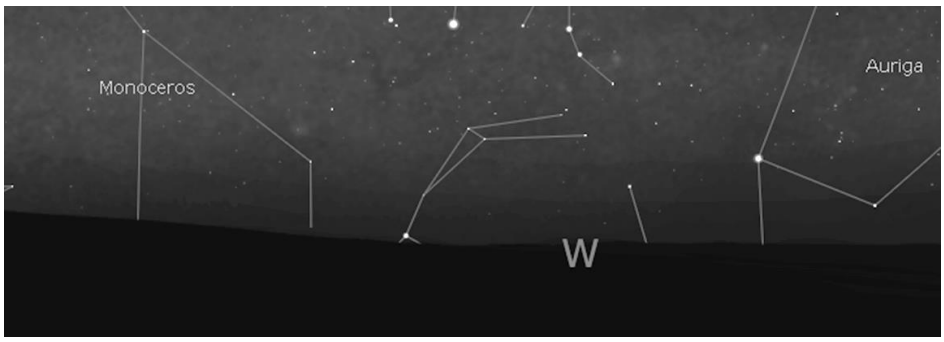


South-eastern entrance 140°–150°: rising of Gacrux at 148° c.2750 BC

208°–215° no alignments unless site predates 2850s, in which case would orient on the setting of Gacrux

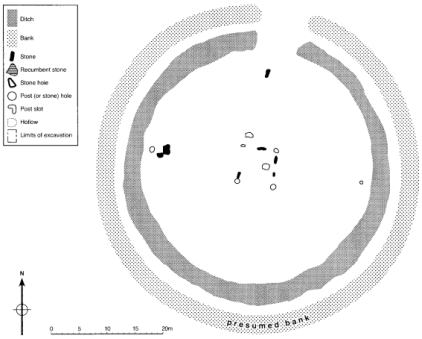


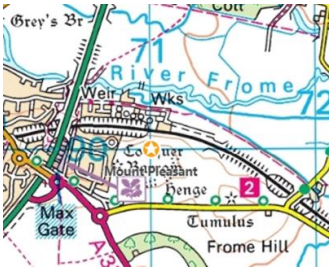
Western entrance 248°–255°: setting of Bellatrix at 253° c.2700 BC

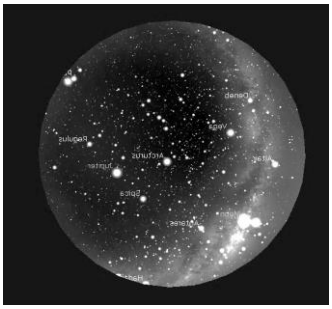


Setting of Betelgeuse at 258° as seen over Conqueror Barrow

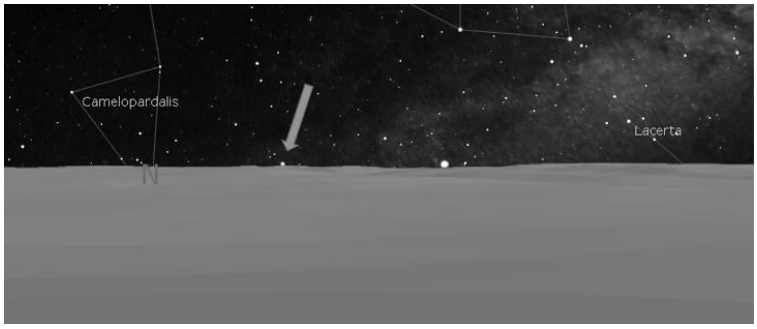
Mount Pleasant site IV (Dorset)



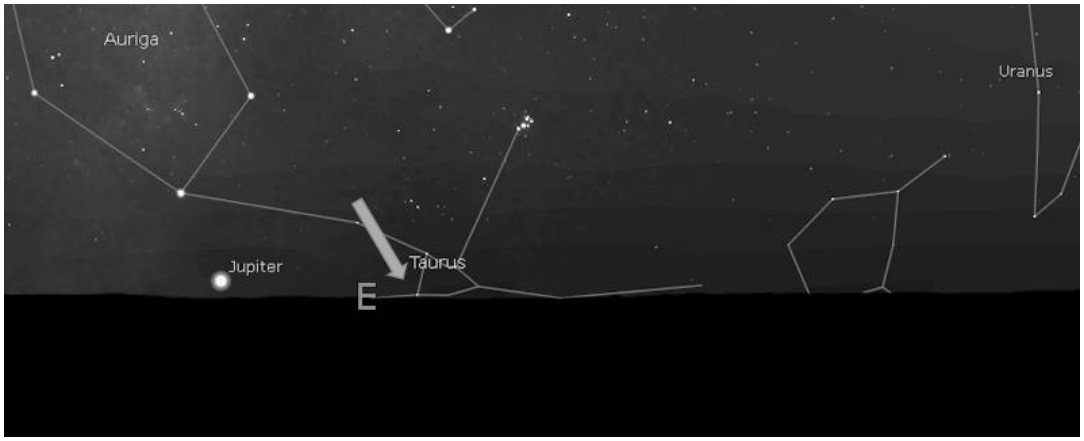




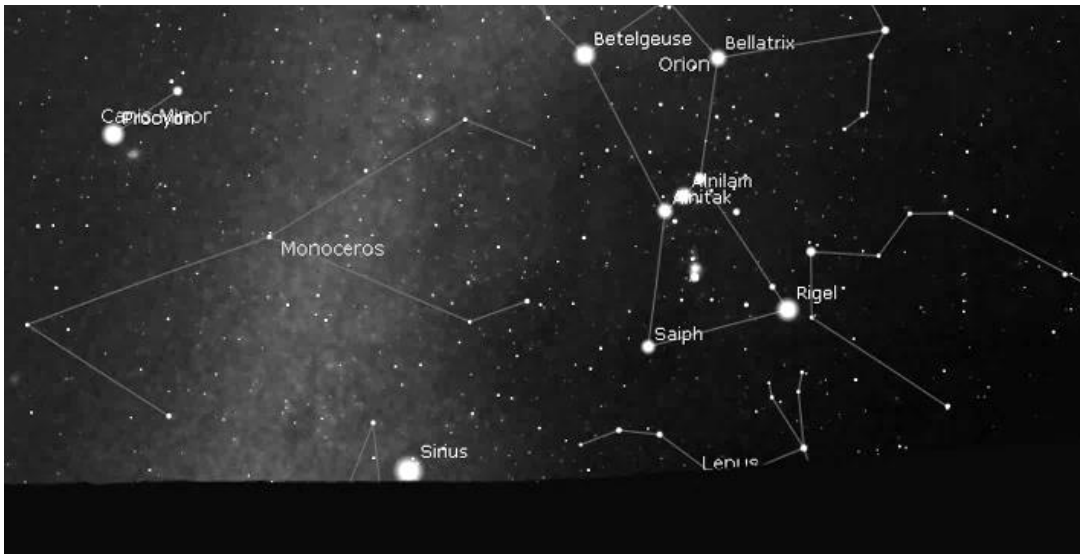
2573–2296 BC



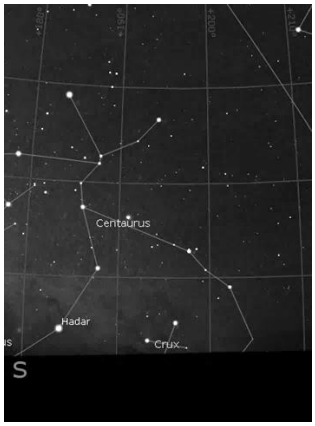
Northern entrance 0°–20°: rise of Segin at 10° c.2500BC

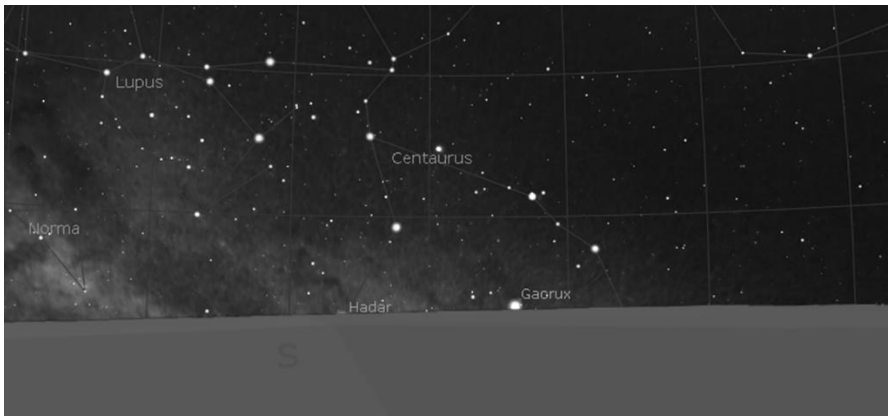


Eastern entrance 90°–97°: rising of Aldebaran at 93° c.2500 BC

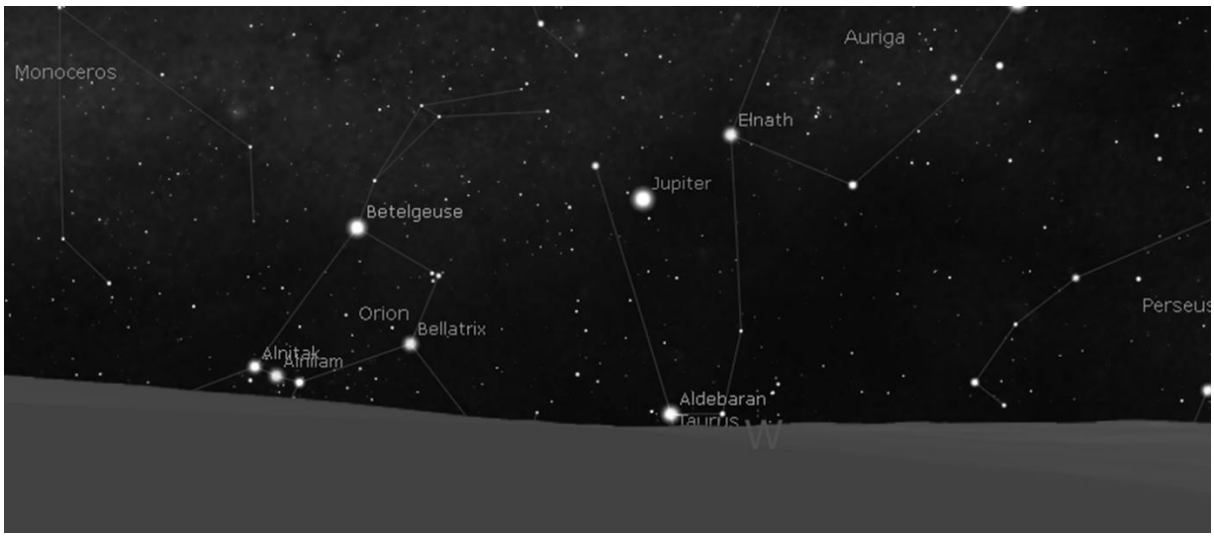


South-eastern entrance 124°: rising of Sirius at 124° c.2500 BC



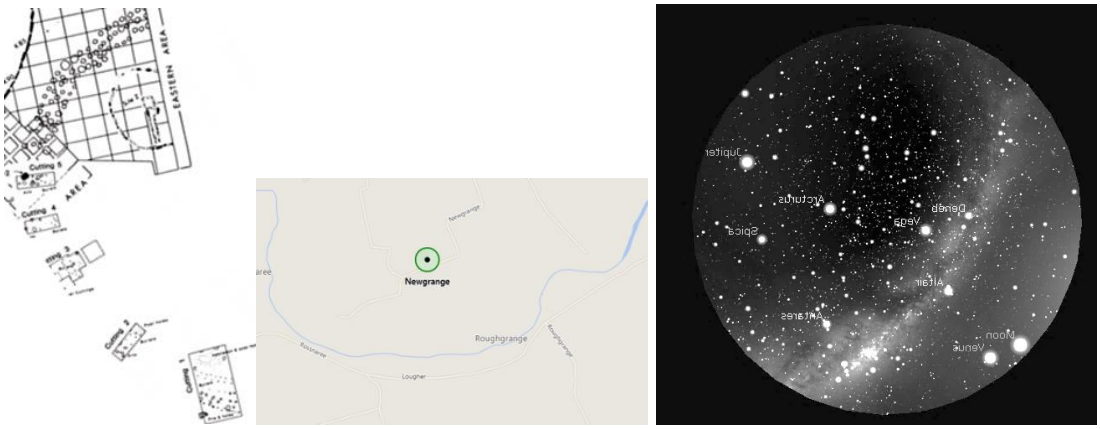


Southern entrance 193°–197° – frames setting of Crux c.2500 BC

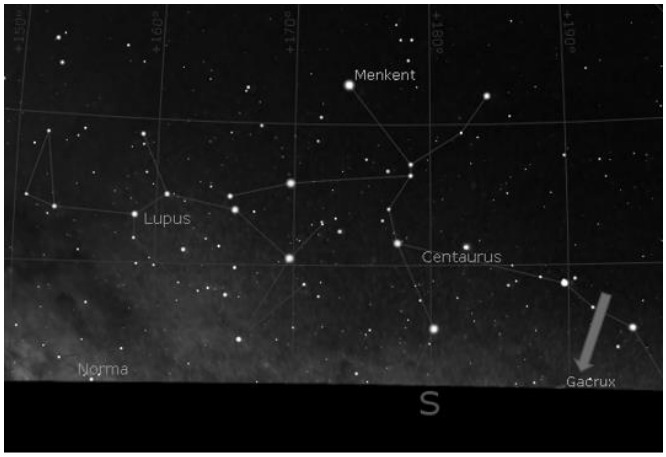


265° setting of Aldebaran in direction of barrow

Newgrange Pit Circle (County Meath)

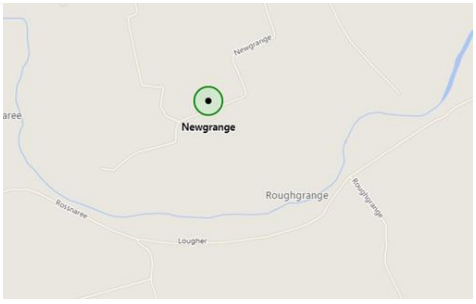


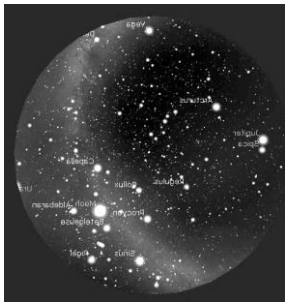
P.D. Sweetman. C14 dates centred c. 2000 BC. (Sweetman 1985, 195-221).

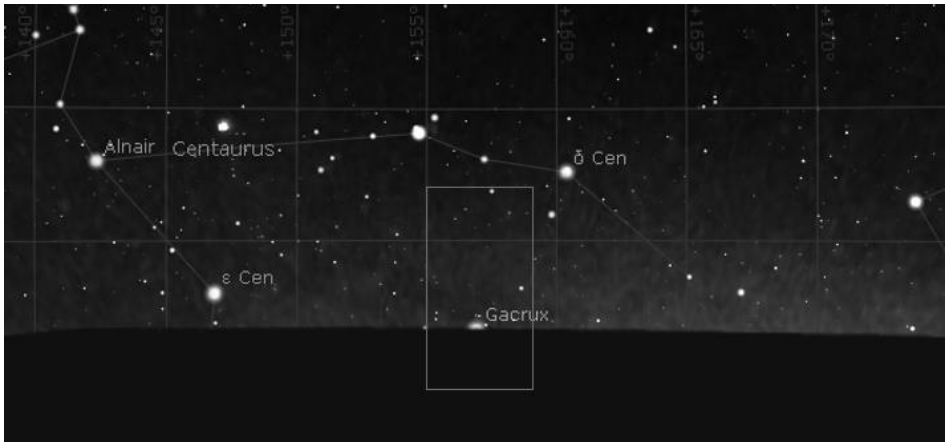


South-eastern entrance 183°–190°: setting of Gacrux at 190° c.2000 BC

Newgrange Site Z (County Meath)



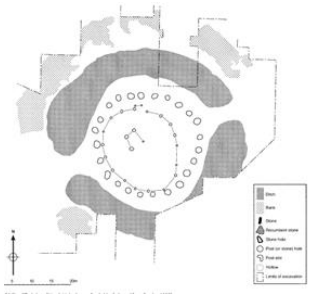


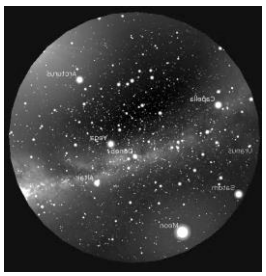


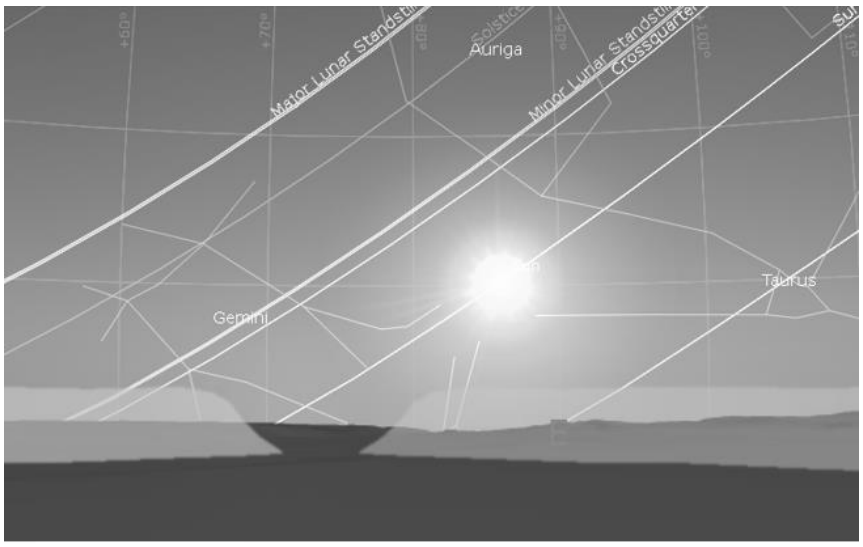
South-eastern entrance 155°–158° aligns on the rising of Crux at 157° c.3000 BC

North Mains (Perth and Kinross)

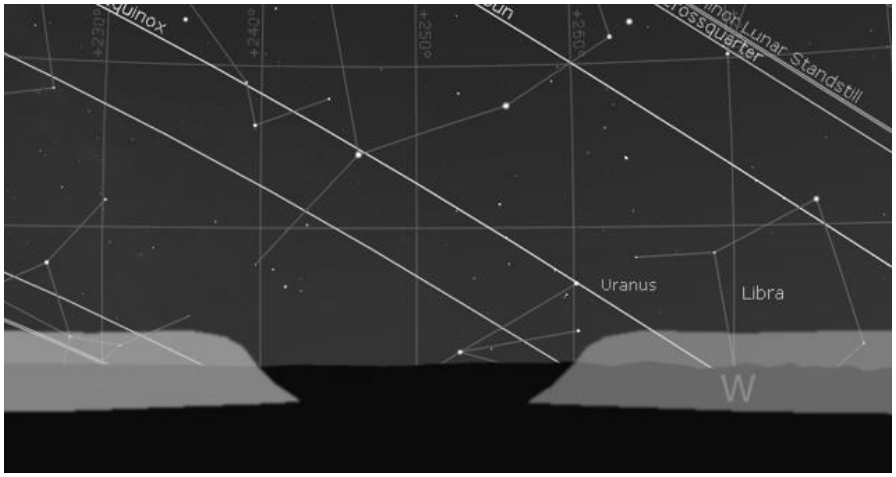
(2866–2472 BC)



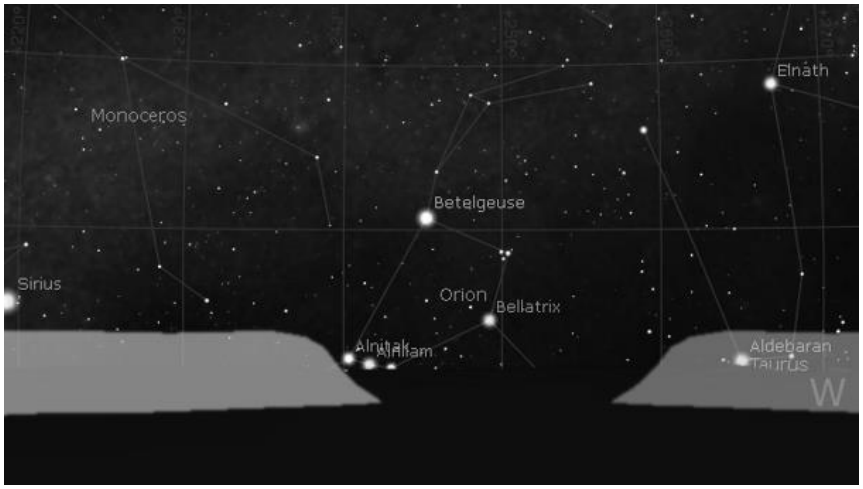




Eastern entrance 68°–77°: aligns with the rising point of the sun in the Orion Point (72°) around May Day c.2300 BC



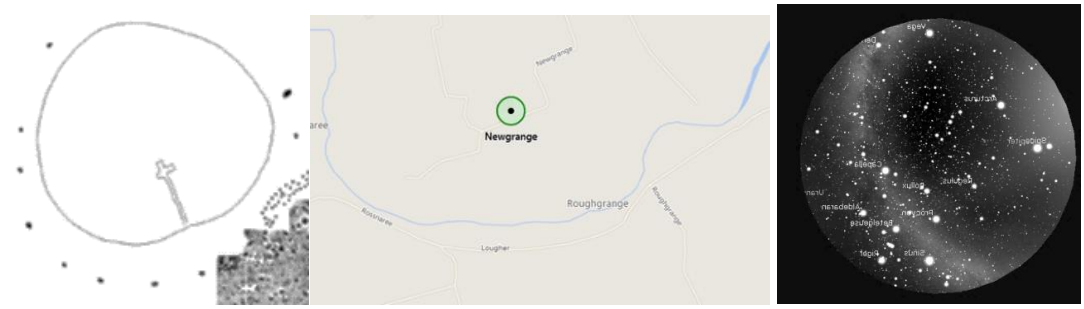
Western entrance 240°–260° frames the setting Antares at 254° c. 2550-2400 BC



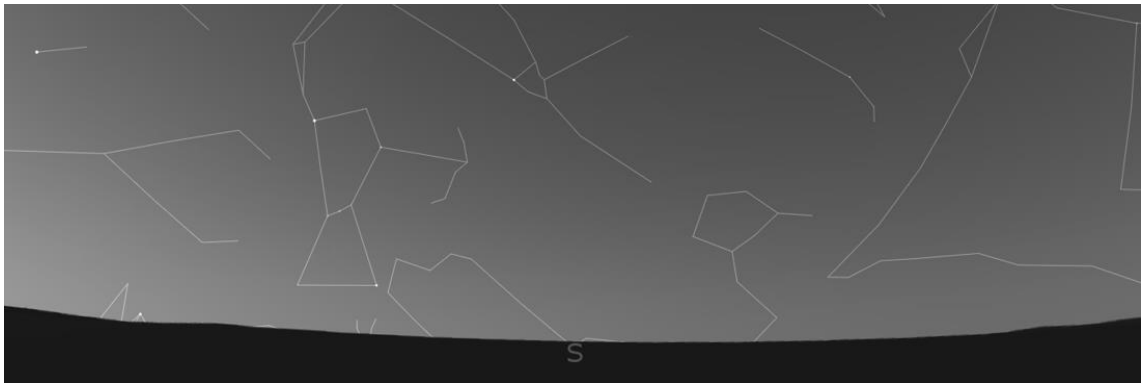
Western entrance 240°–260° frames the setting Orion's belt 240°–244° c.2550-2400 BC

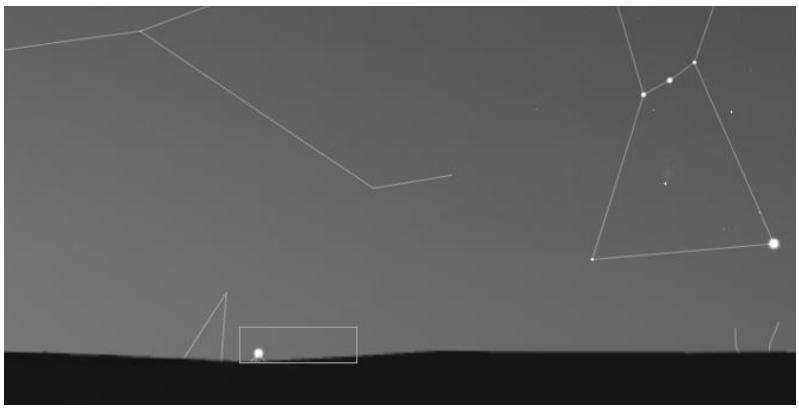
Newgrange (County Meath)

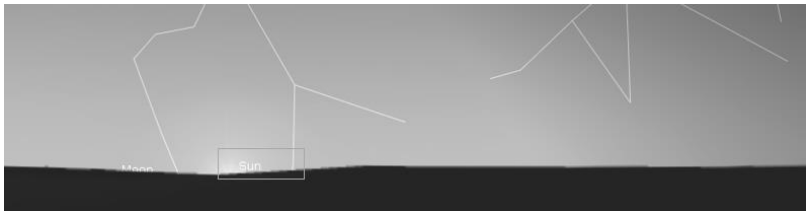
(3262 –2921 BC, earth between roof slabs)



Milky Way matches Boyne as Orion's hand appears

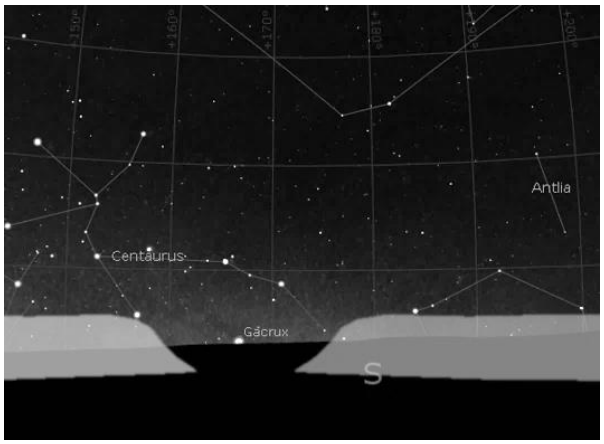


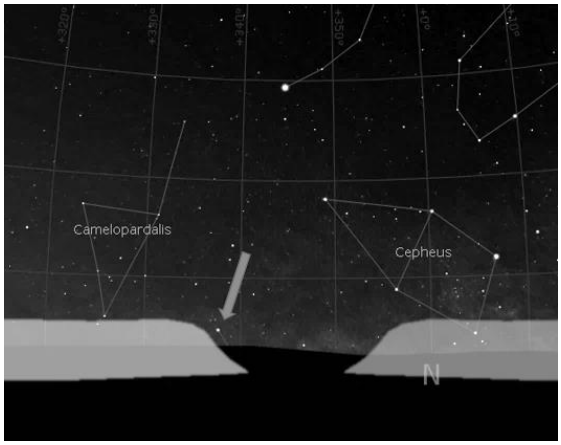




Sirius (above) aligns with the roof-box at 133°; its heliacal rising occurs a month after the summer solstice in 3200 BC. The sun matches this alignment at sunrise on the days around the midwinter solstice (below)

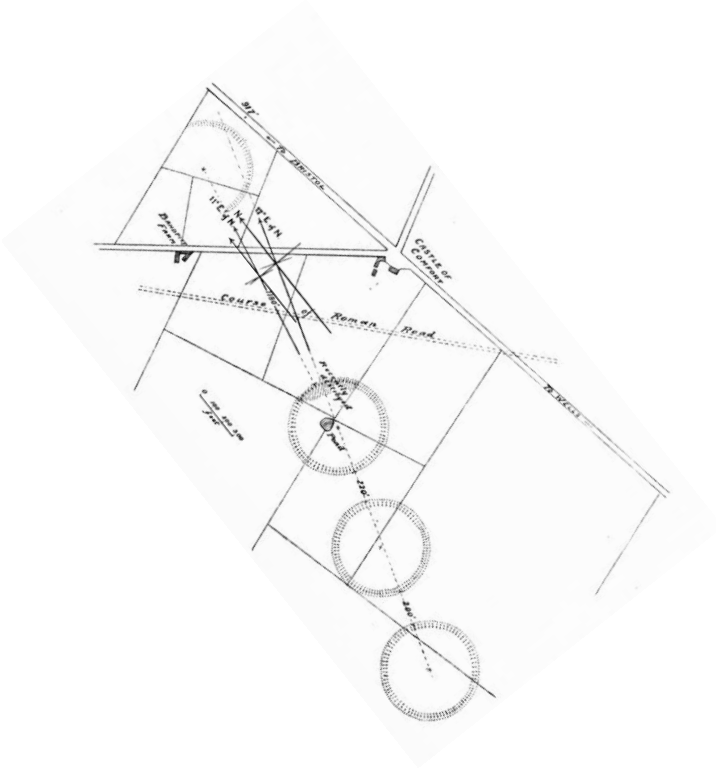
Nunwick (Northumberland)

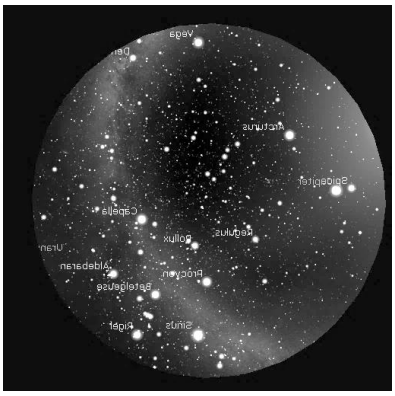


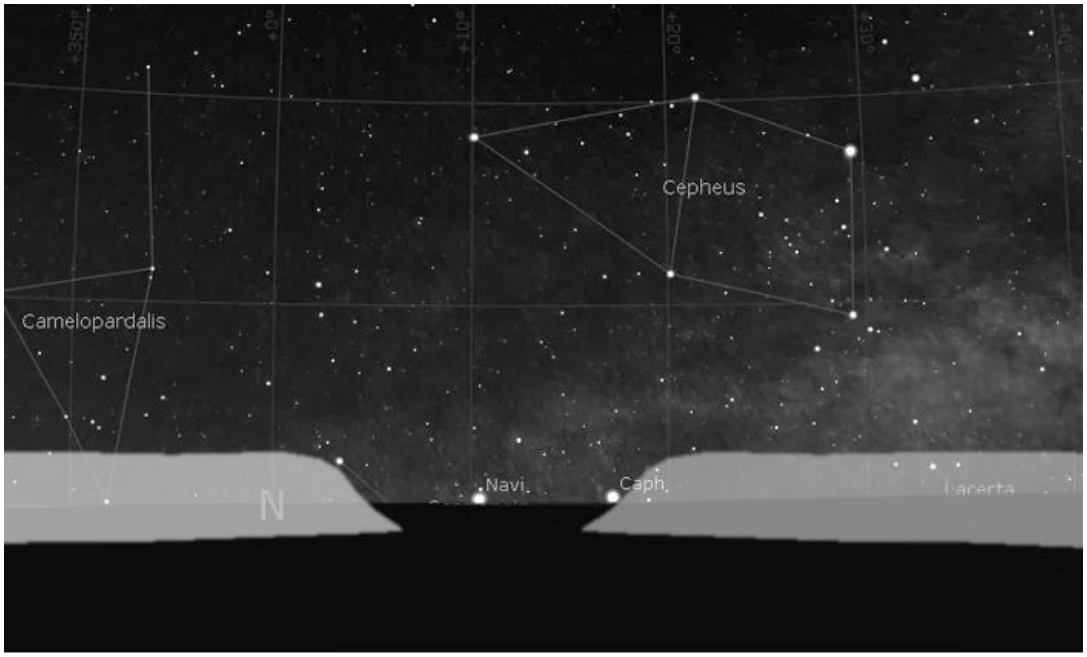


South-eastern entrance 158°–175° frames the rising of Gacrux at 167° c.2950 BC (left); Northern entrance 338°–355° aligned on the setting of Segin at 340° c.2950 BC (right)

Priddy 1 (Somerset)

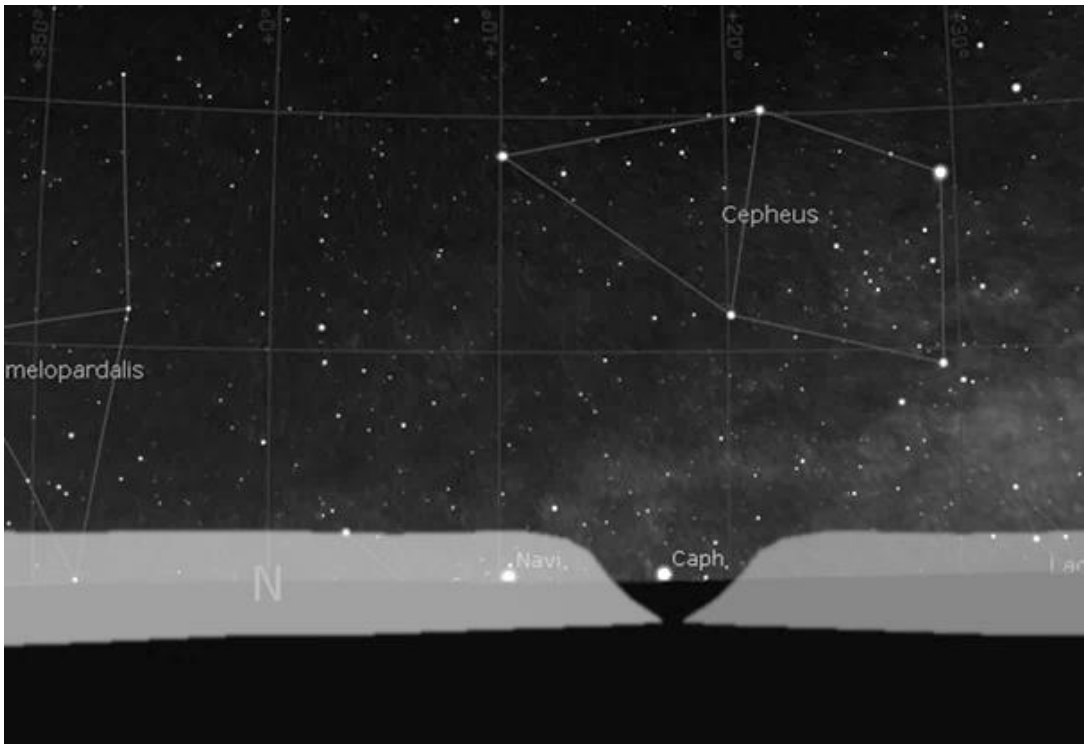






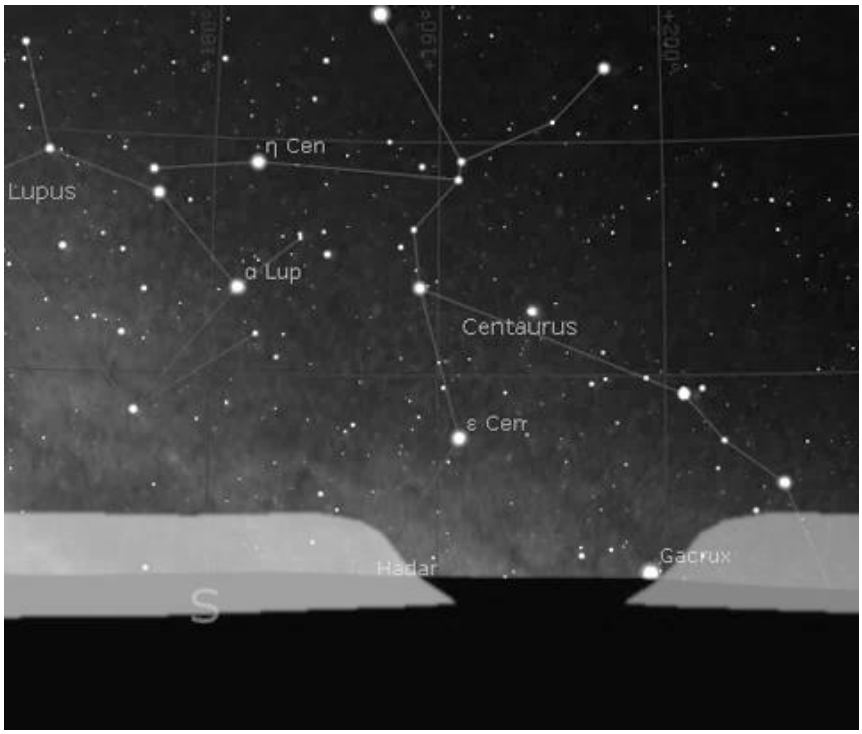
Northern entrance 5°–18° seems defined by the rising of Cassiopeia c.2250 BC

Priddy 2 (Somerset)



Northern entrance 15°–20°: frames the rising of Caph at 18° c.2250 BC

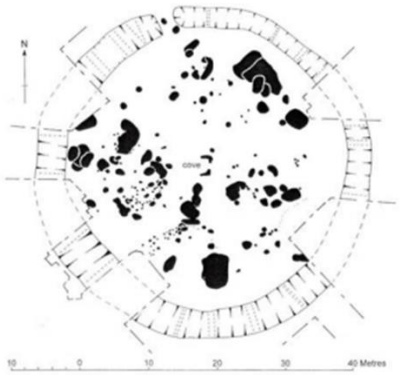
Priddy 3 (Somerset)

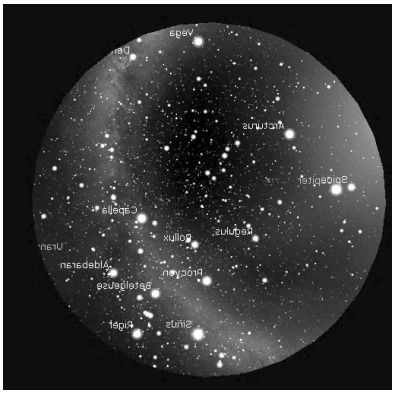


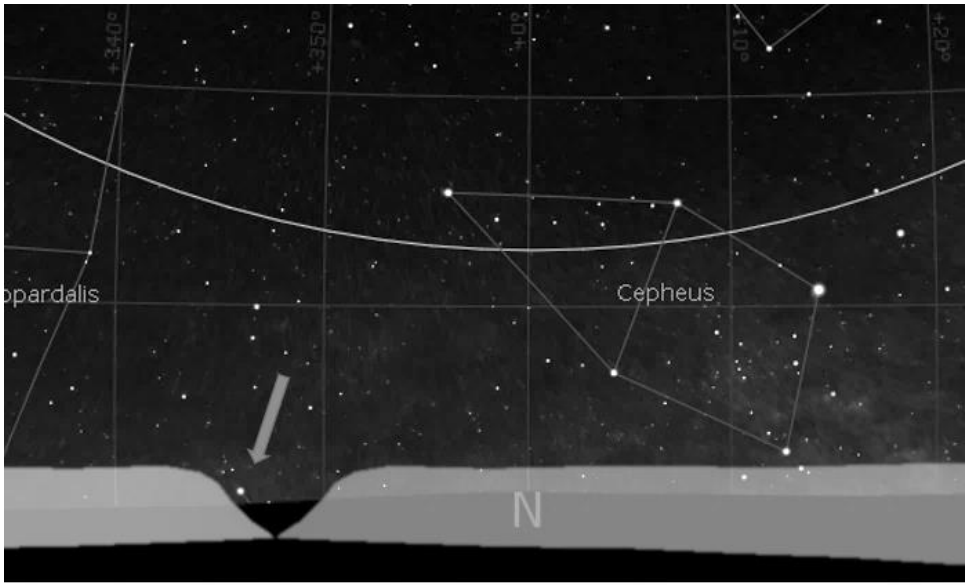
Southern entrance 190°–200° aligns on the setting of Gacrux at 200° c.2250 BC

Ringlemere (Kent)

Charcoal from a pit containing Grooved ware near the north entrance has yielded a radio-carbon date of 2890–2600 cal BC (2 sigma; Beta-183862).

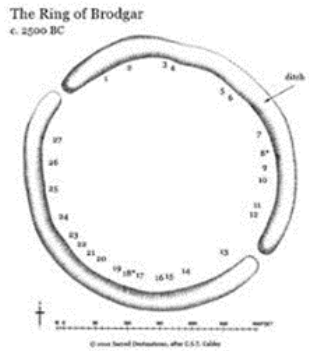


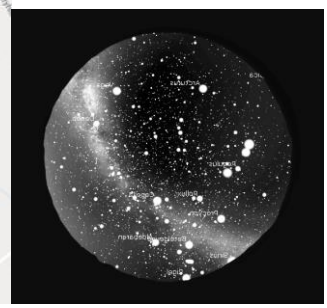


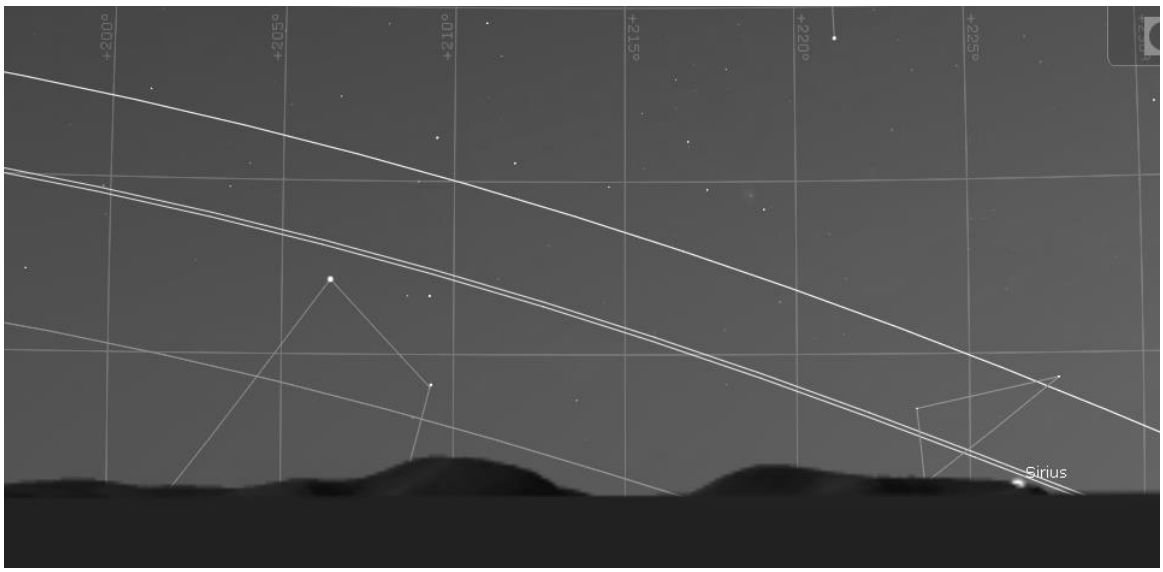


Northern entrance 345°–350°: aligns with the setting of Segin at 345-346° c. 2700 BC

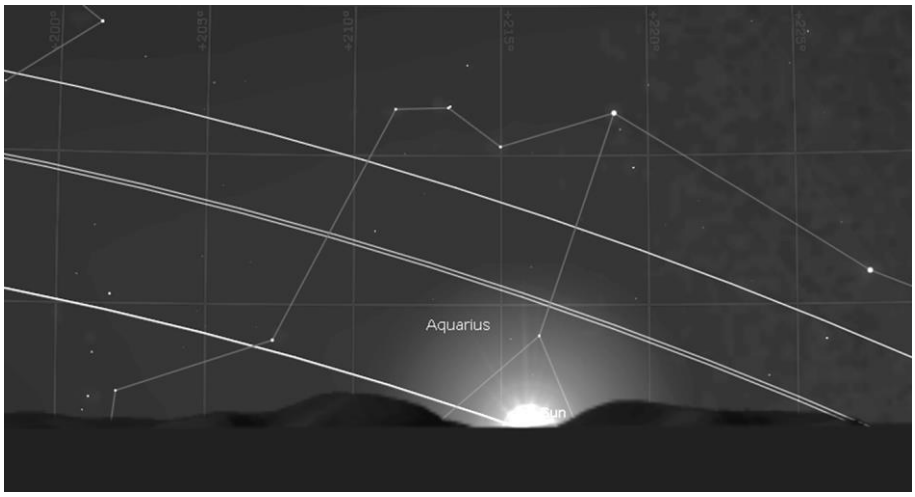
Ring of Brodgar (Orkney)



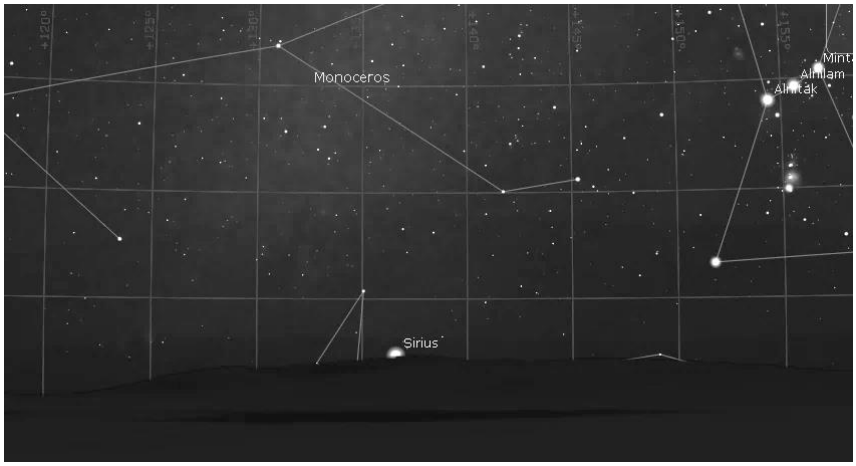




The setting of Sirius defined by the Twin Hills of Hoy c.2300 BC



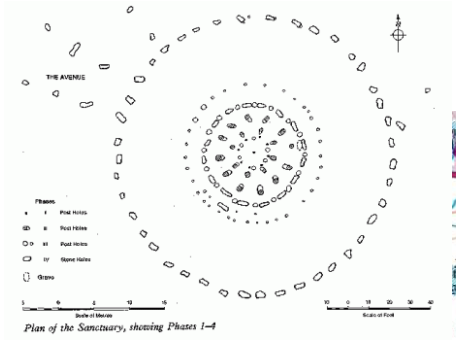
The setting of the sun defined by the Twin Hills of Hoy

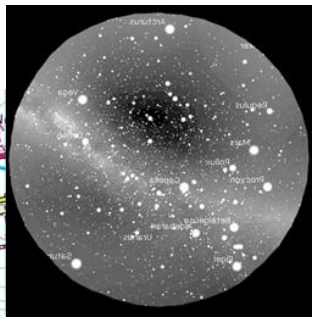


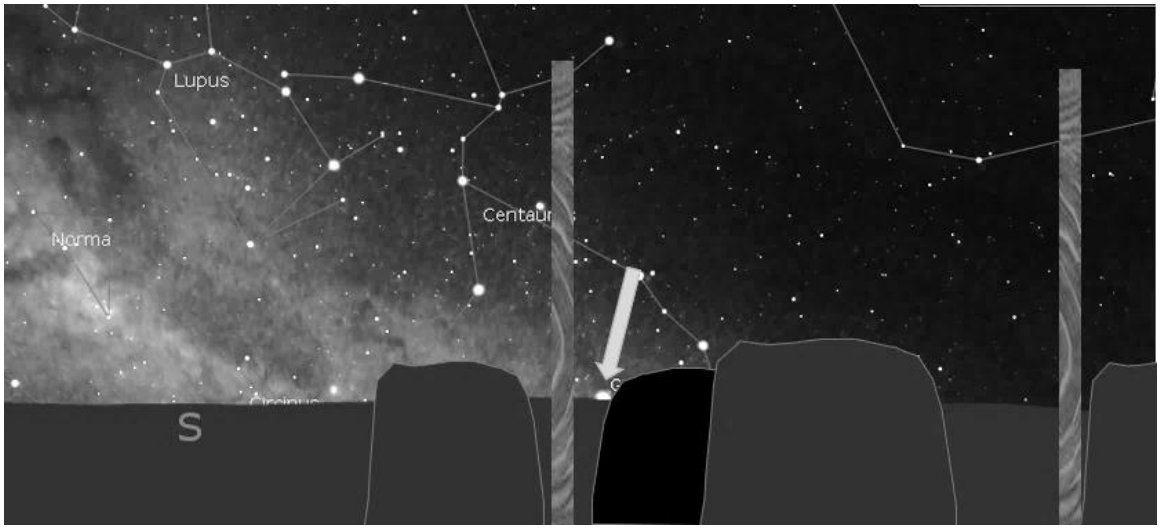
South-eastern entrance 132°–137° orients on the rising of Sirius at 134° c.2300 BC

North-western entrance 309°–315° aligns on the setting of the Milky Way as Sirius rises c.2300 BC

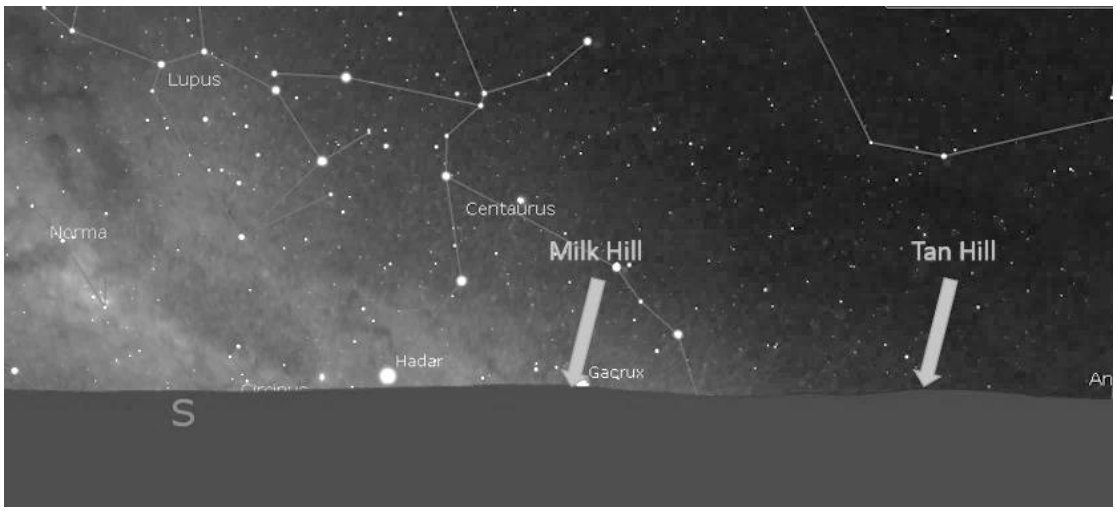
Sanctuary (Wiltshire)



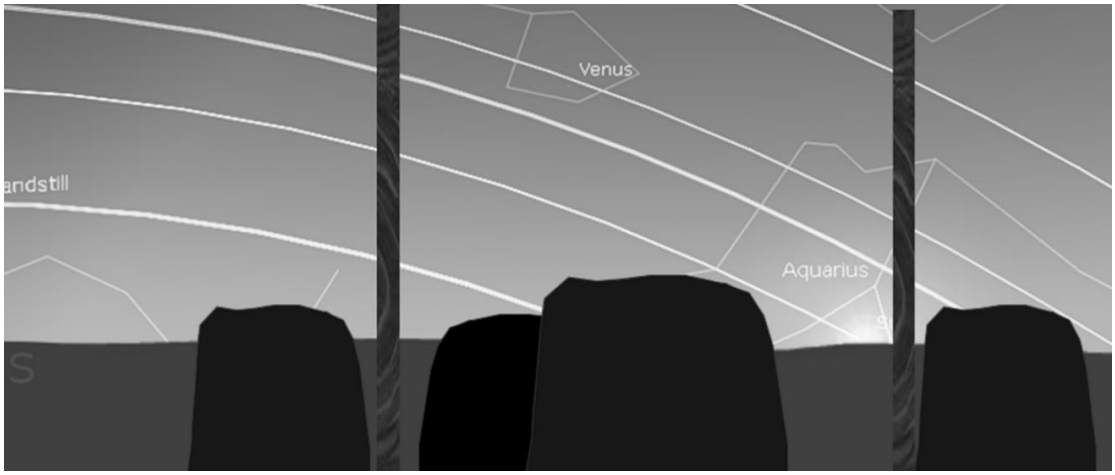




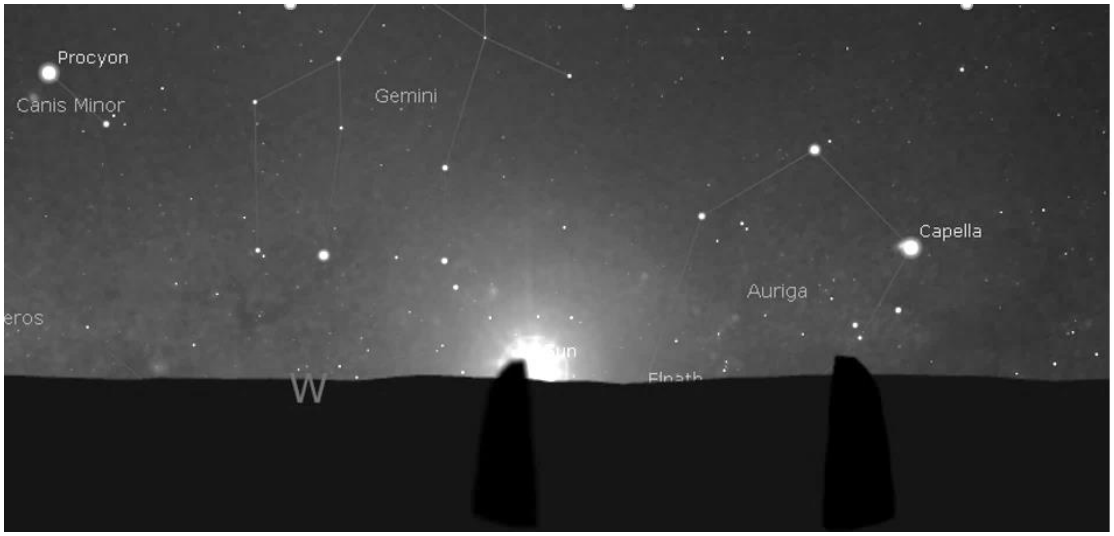
South-eastern stone 205°–215° defines the setting of Gacrux at 205° c. 2600BC



Gacrux at this point is setting over the peak of Milk Hill



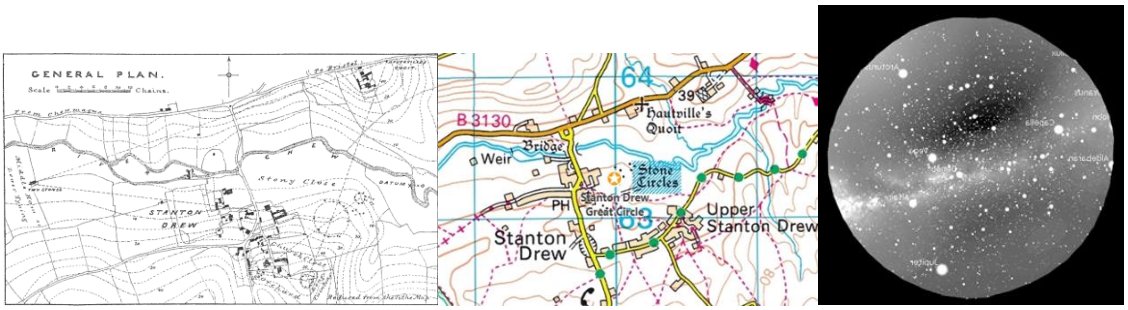
South-eastern ‘entrance’ 205°–226° seems defined by the setting of midwinter sun over Tan Hill at 226°

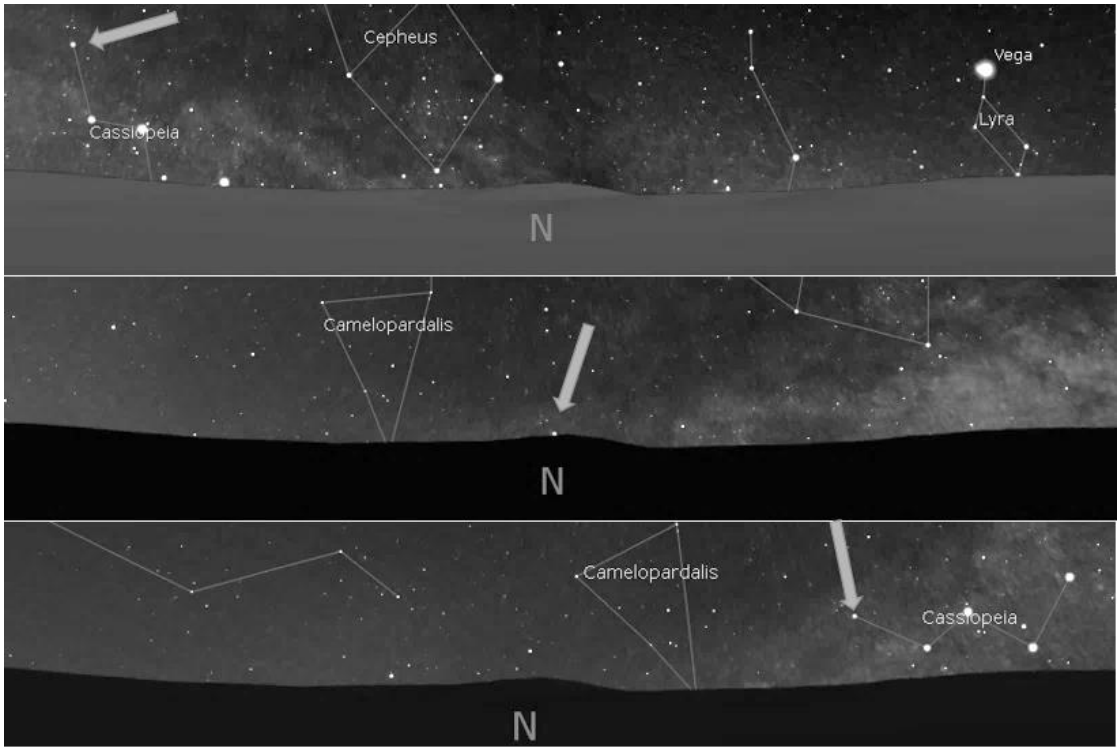


North-western entrance (avenue) 285°–305° : setting of sun in the Orion Point at 285° around May Day c.2600 BC

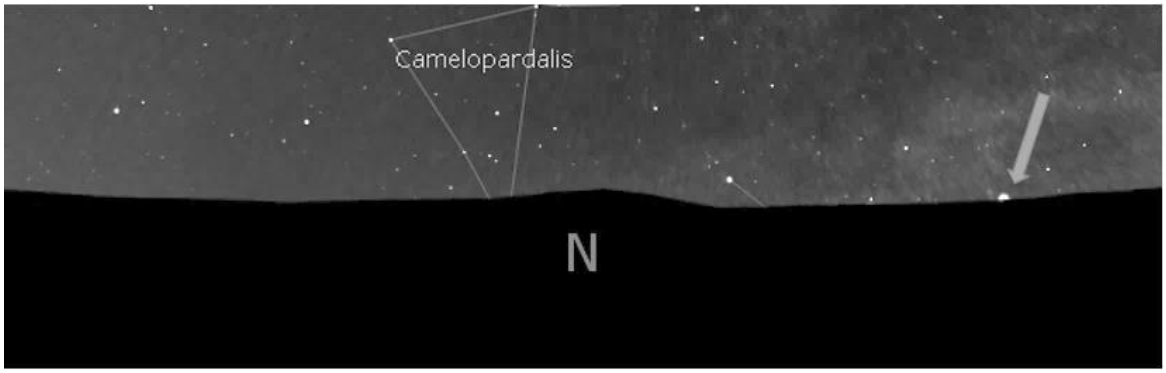
Stanton Drew (Somerset)

2000 BC

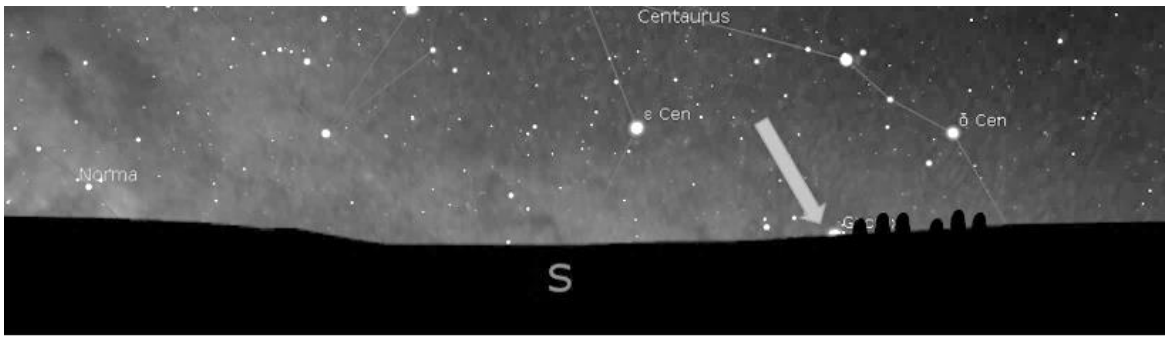




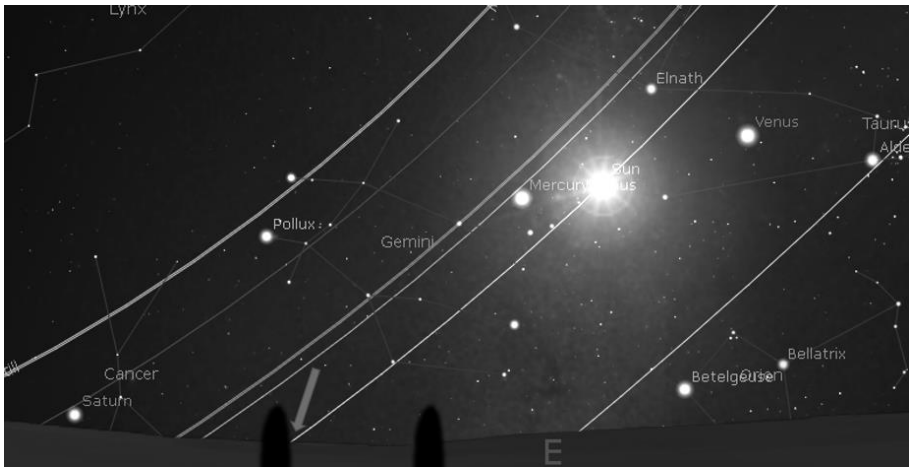
Segin clips hill to the north c.2000 BC



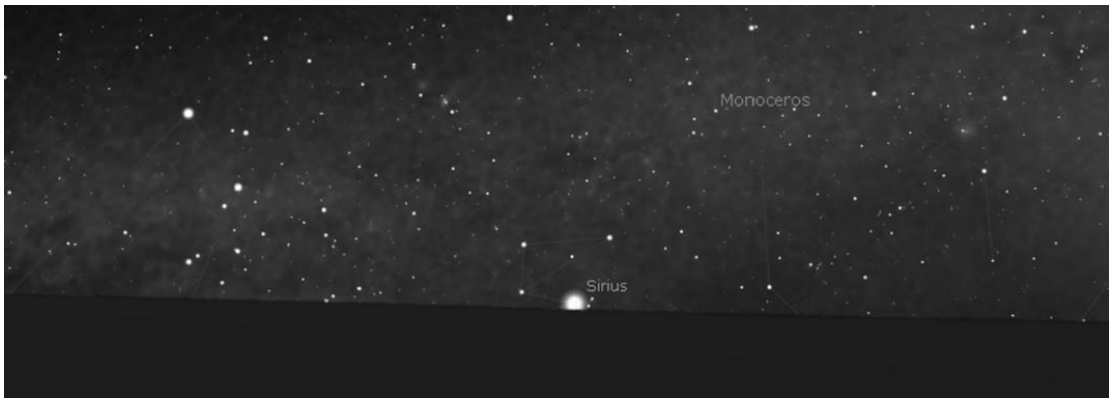
The rising of Caph can be seen from the centre of the circle at 21° aligned with the Quoit



In the opposite direction (from the Quoit back through the main circle towards the SW circle) at 194°–210°; one can view the setting Gacrux at 194° c. 2000BC

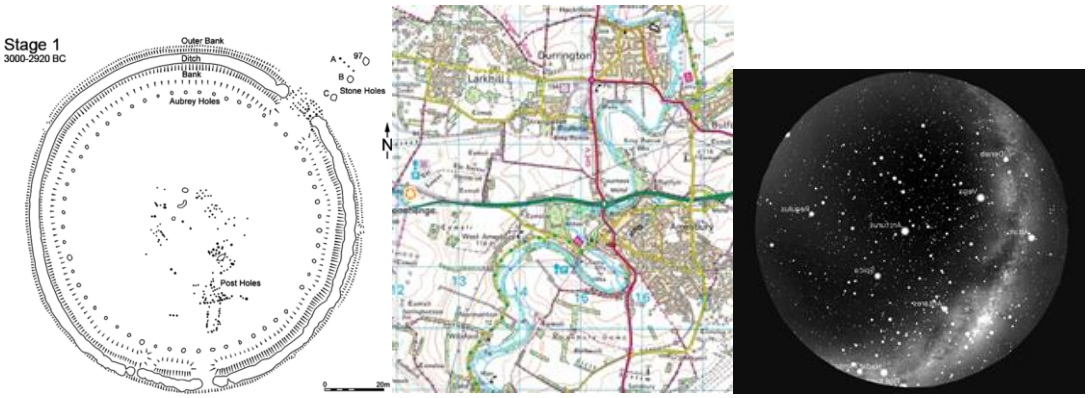


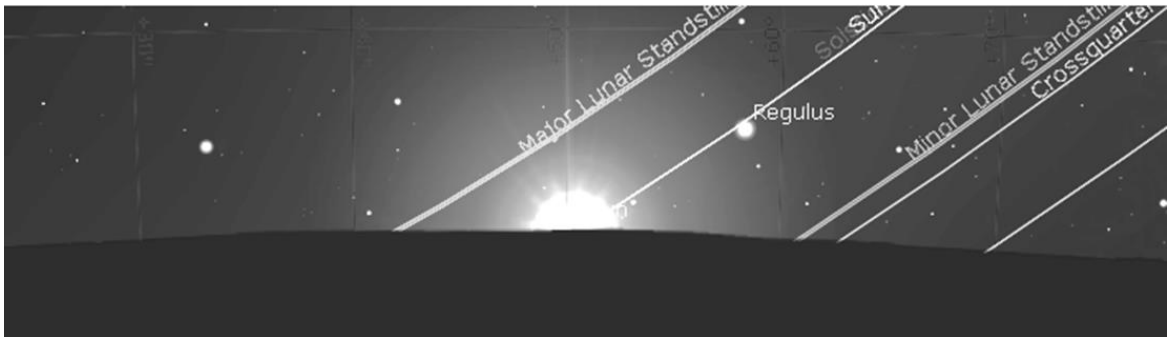
Looking along the Stone Avenue from the main circle to the North-East (70°–80°) one can see the sun rising in the Orion Point at 70° in late April c. 2000 BC



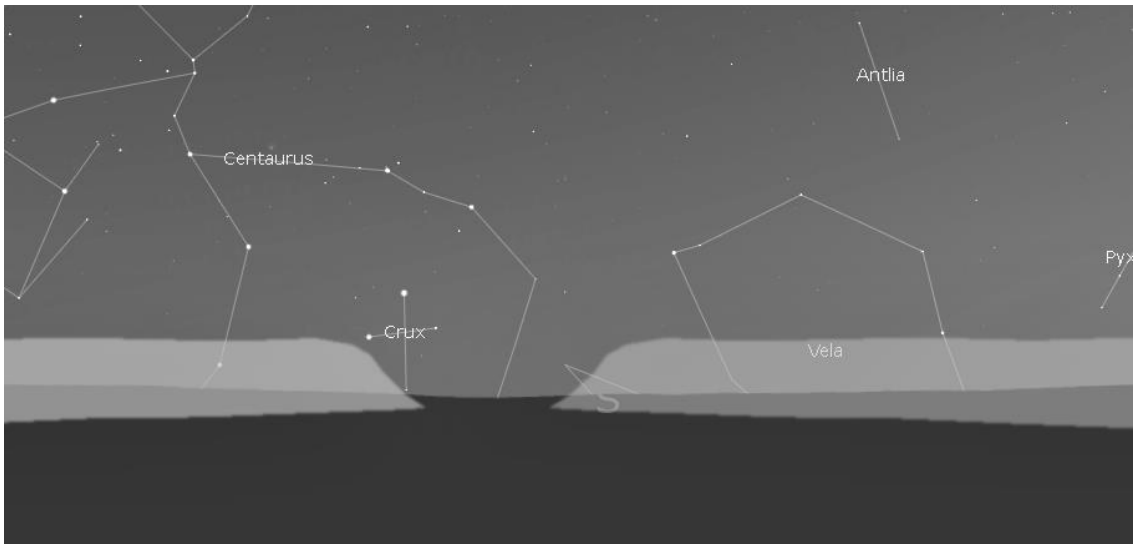
The view from the Cove through the North-East circle aligns on the setting of Sirius 236° c.2000 BC

Stonehenge (Wiltshire)

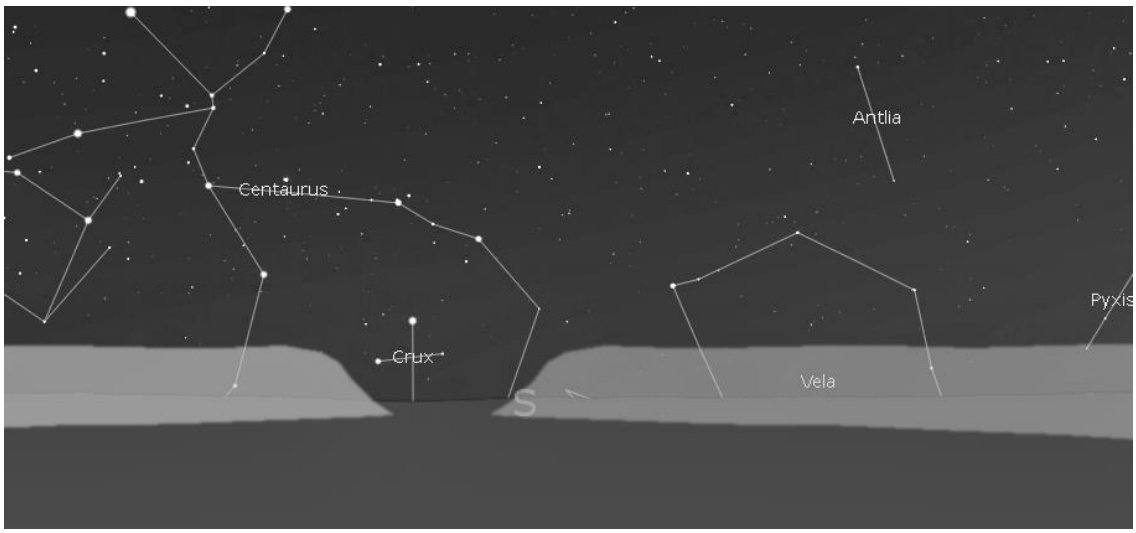




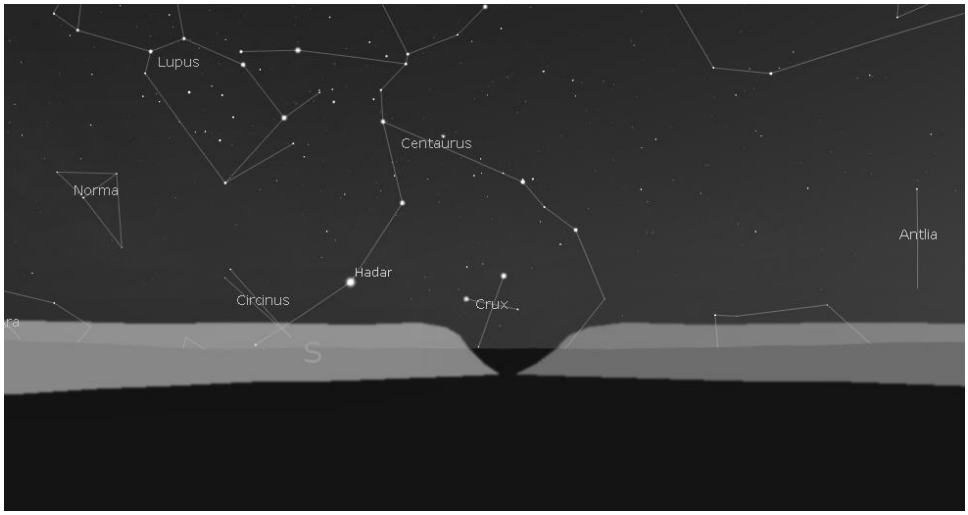
North-eastern entrance 38°–50° was possibly re-oriented in the Beaker period to align on the midsummer sunrise at 50°



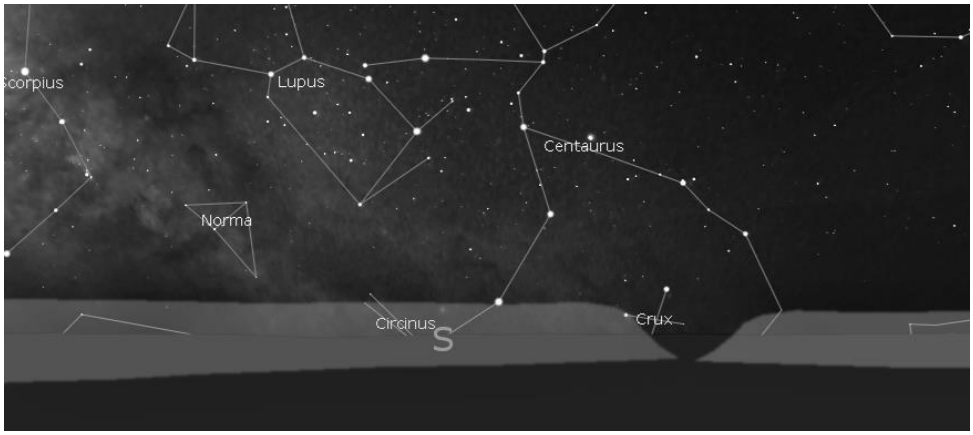
Southern entrance 168°–178°: rising of Acrux 168° c.3100 BC



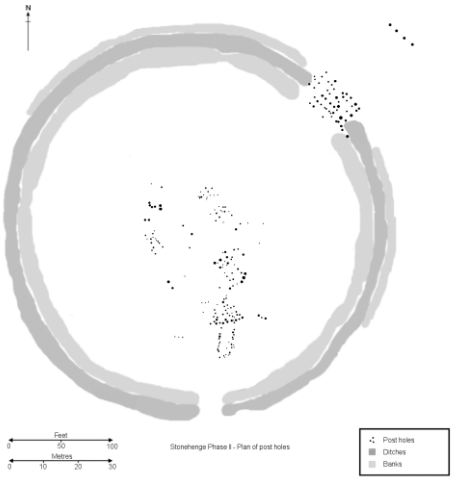
Southern entrance 168°–178°: rising of Crux c.2600 BC; Acrux is no longer visible above the horizon at this date



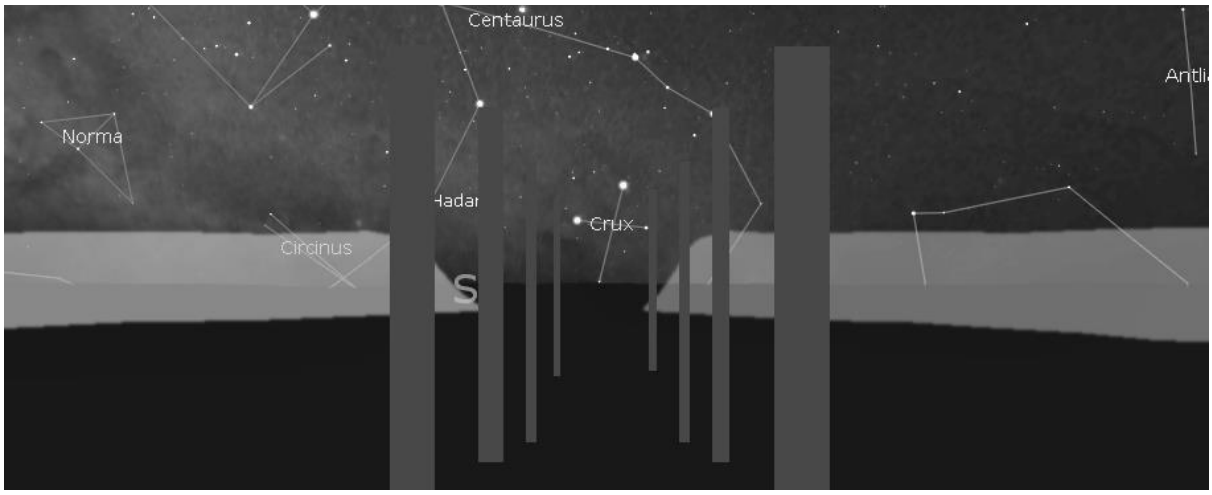
South-south-western entrance 194°–197°: setting of Acrux c.3100 BC



South-south-western entrance 194°–197° setting of Crux c. 2600 BC; Acrux no longer appears above the horizon

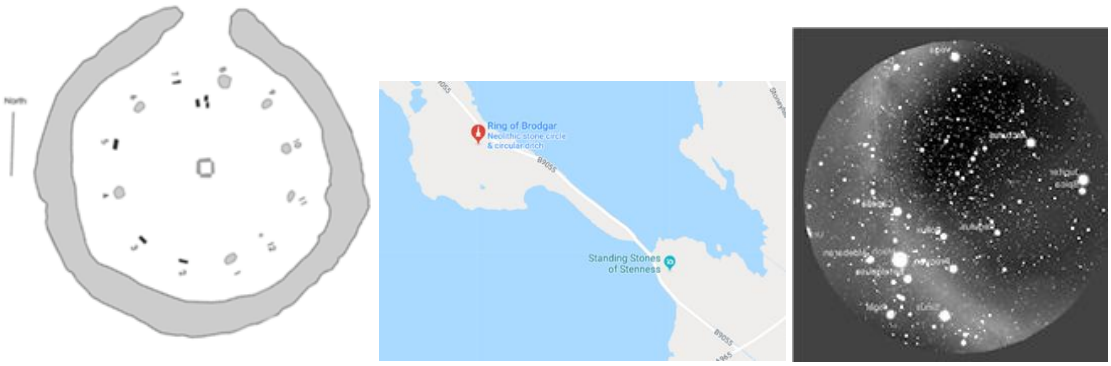


C 2900 BC corridor aligns with setting of Acrux which is no longer visible through the SSE entrance at this date

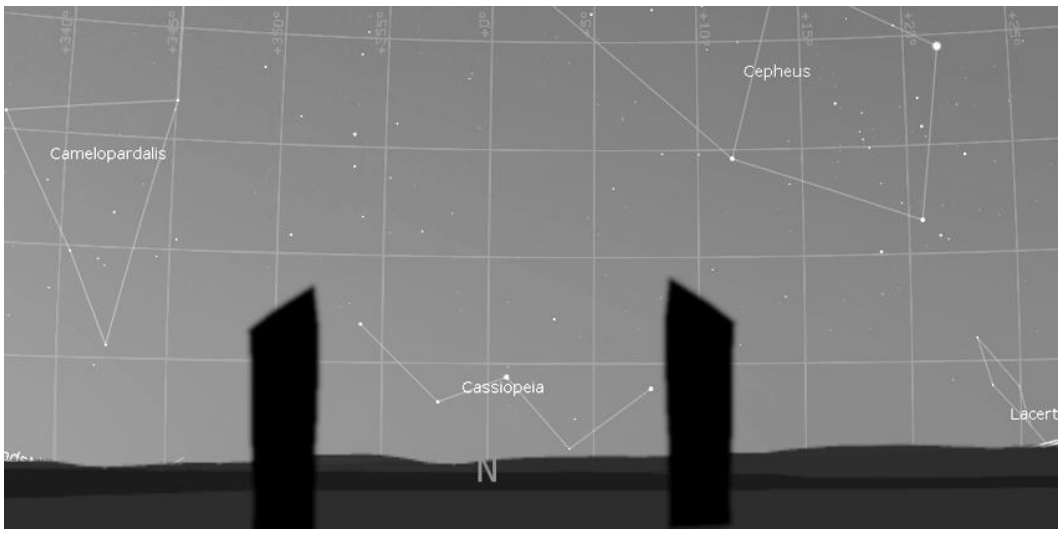


Southern corridor c.185–195°; setting of Acrux 186° c.2900 BC

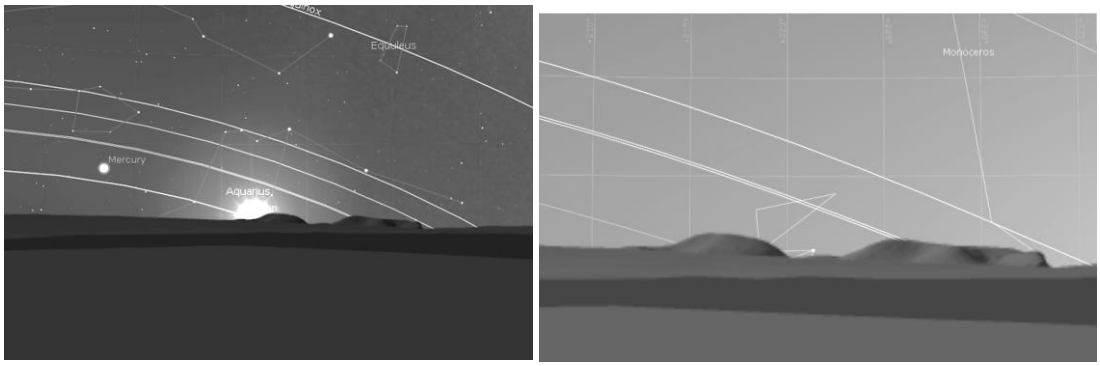
Stones of Stenness (Orkney)



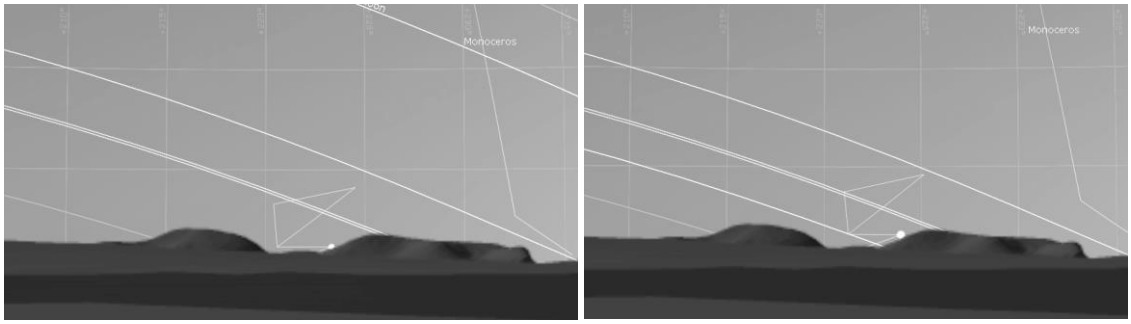
3090–2707BC and 2915–2503 BC



Northern entrance 350°–008° aligns on Cassiopeia

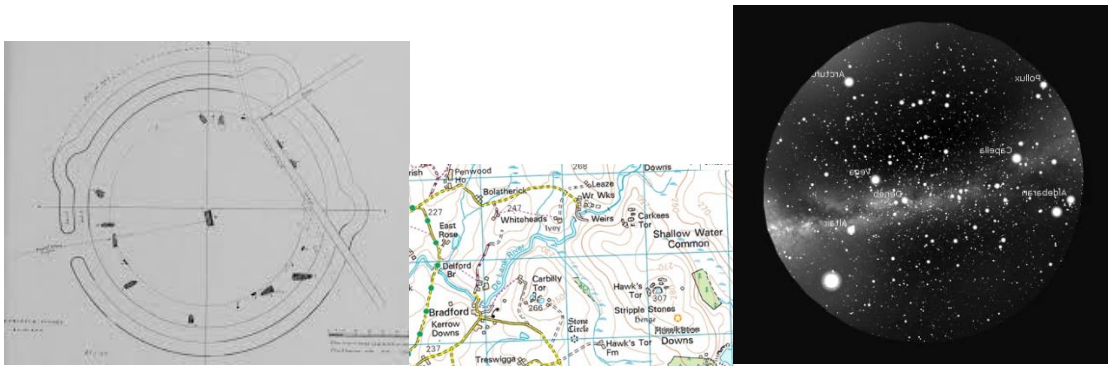


Midwinter sunset defined by the twin Hills of Hoy (left); Setting of Sirius defined by the Twin Hills of Hoy c.2700 BC (Right)

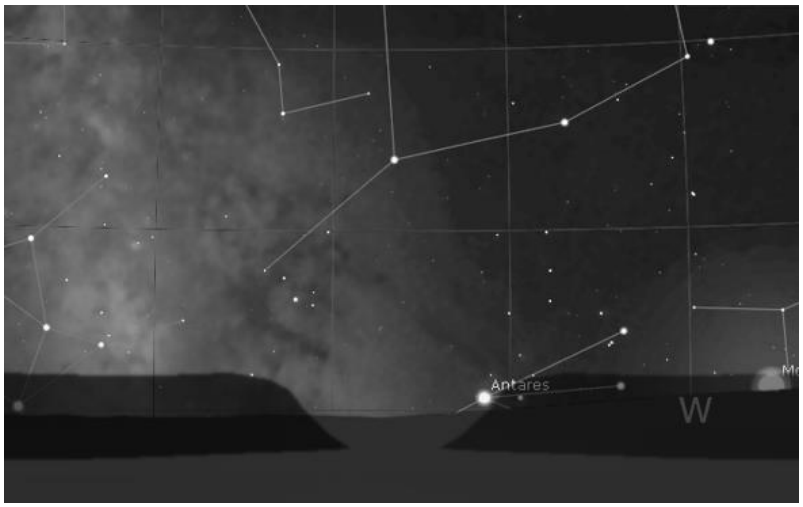


Setting of Sirius defined by the Twin Hills of Hoy c.2500 BC (left); Setting of Sirius defined by the Twin Hills of Hoy c.2300 BC (right)

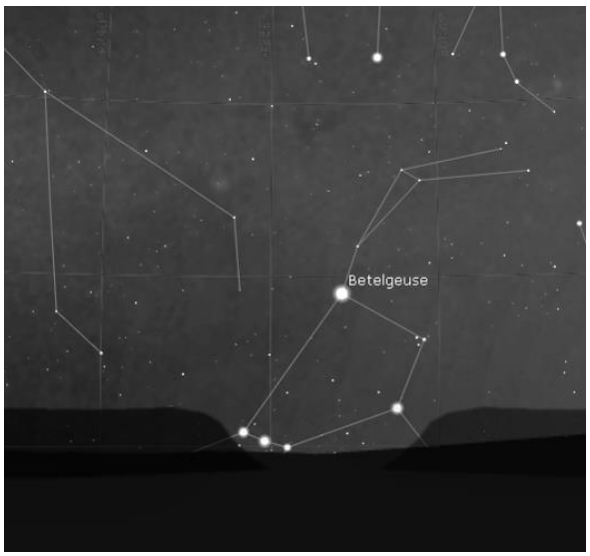
Stripple Stones (Cornwall)



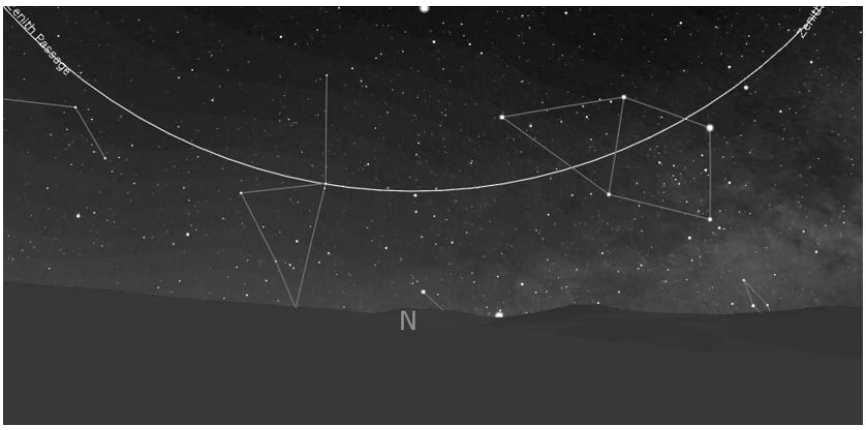
Harold St. George Gray's Surveyed Plan of the Stripple Stones 1905.



South-western entrance 248°–258°: From the pillar stone the entrance frames Antares c 2300 BC (above), but from the henge centre it frames Orion's belt 2000 BC (below)



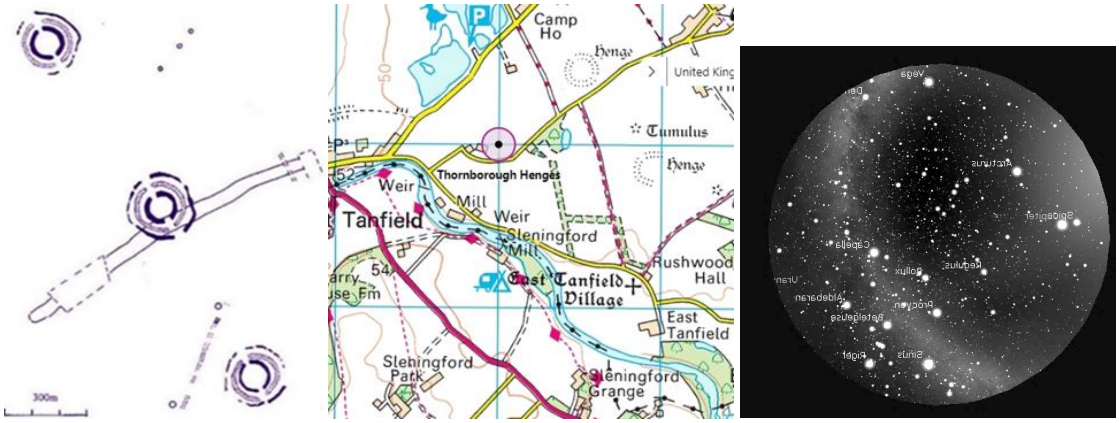
South-western entrance framing Orion's belt

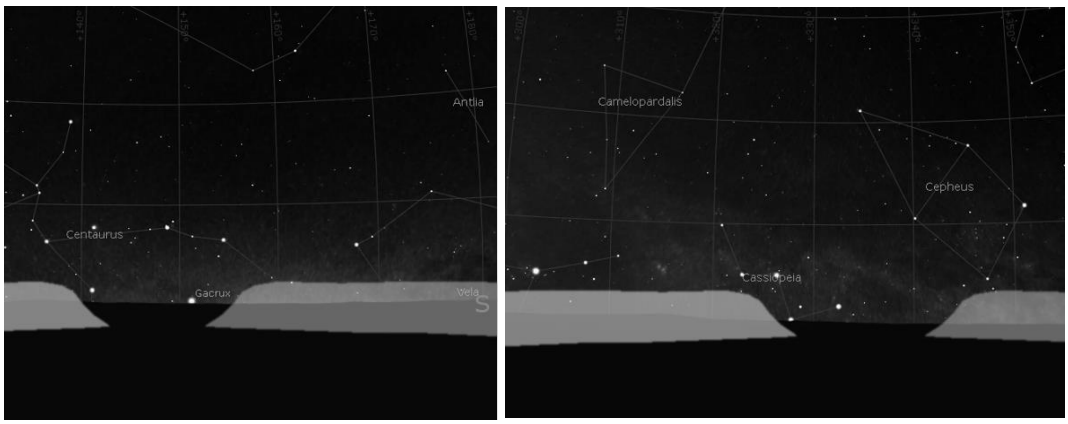


Rising of Navi between twin hills from 2100 BC, Segin clips exact north c 2300 BC

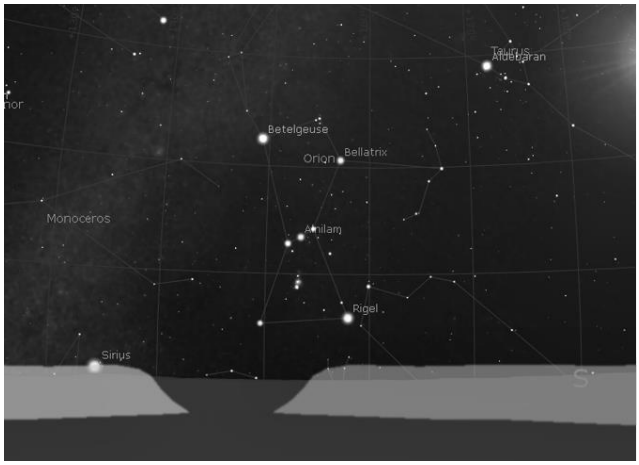
Northern ‘bump’ in henge bank at 24° aligns with Shedar rising at 24° c. 2100-2000 BC

Thornborough N (North Yorkshire)



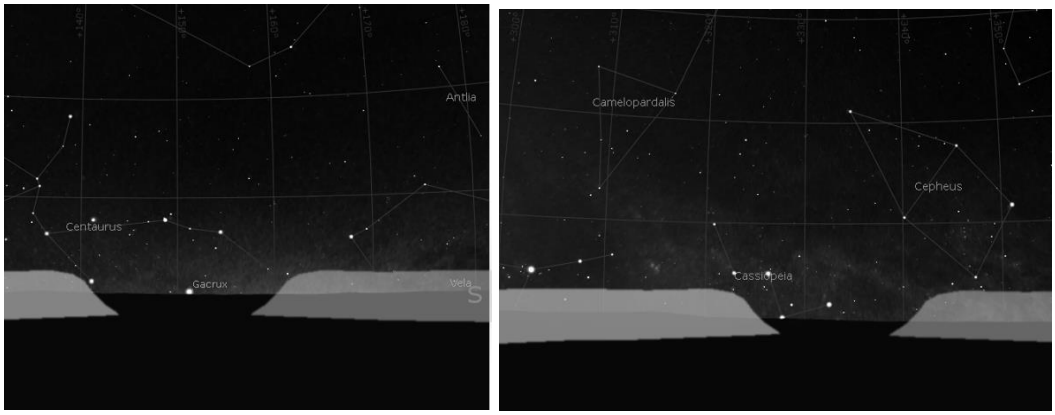


South-eastern entrance 140°–155° frames the rising of Gacrux at 152°; at the same time as the rising of Crux, the Milky Way rings the horizon c.3500 BC (left); North-western entrance 325°–345°: setting of Shedar at 327° c.3500 BC (right)



South-eastern entrance 140°–155° - Harding's postulated Orion alignment as Sirius rises c.3500 BC

Thornborough M (North Yorkshire)

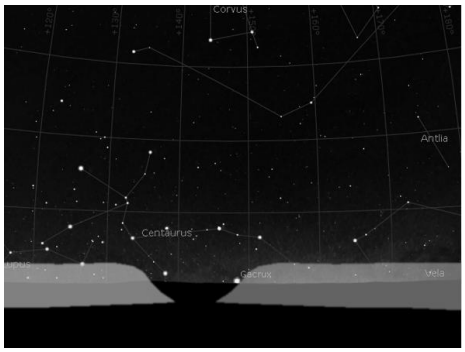


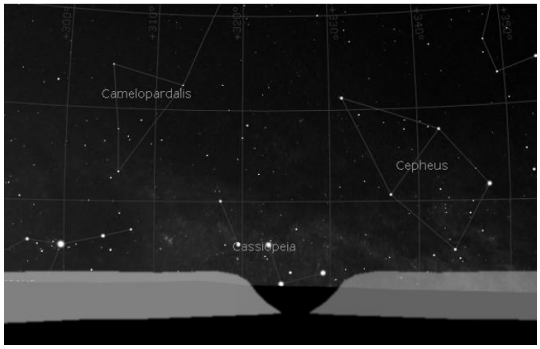
South-eastern entrance 140°–160° frames the rising of Gacrux at 152° c.3500 BC; North-western entrance 325°–340°; setting of Shedar at 327° c.3500 BC

South-eastern entrance 140°–160° - Harding's postulated Orion alignment as Sirius rises c.3500BC

Thornborough S (North Yorkshire)

3500 BC

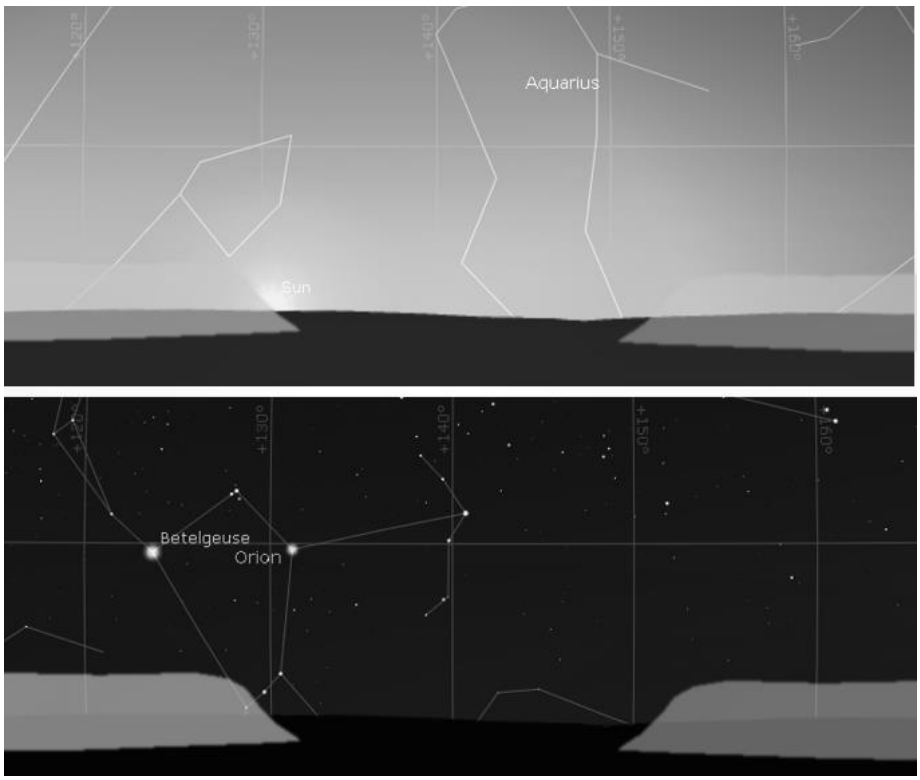




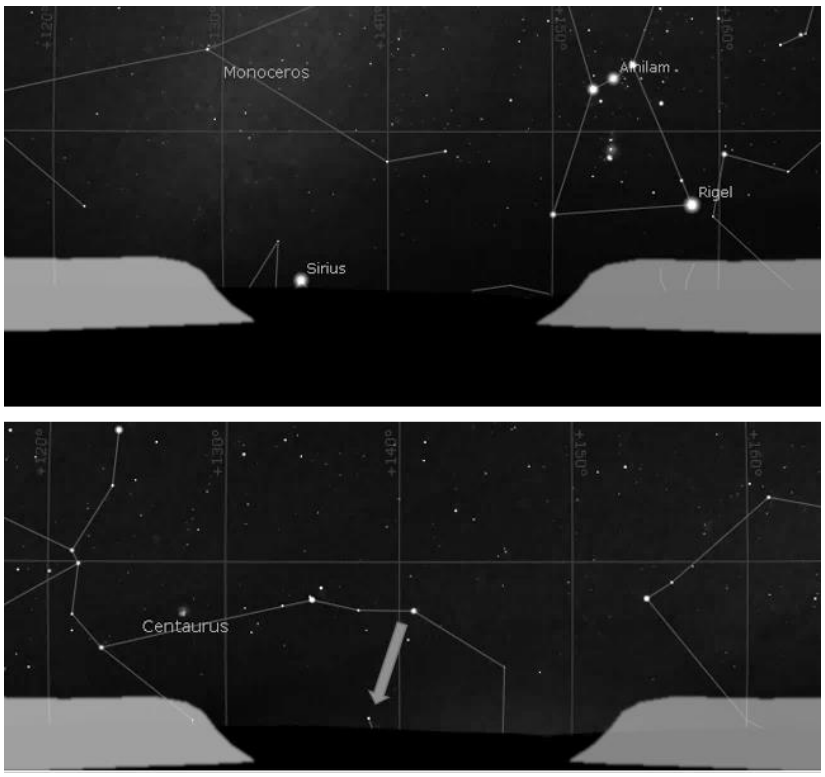
South-eastern entrance 135°–148°, rising of Gacrux 148° c.3500 BC; North-western entrance 320°–333°: setting of Shedar 324° c.3500 BC

Wyke Down 2 (Dorset)

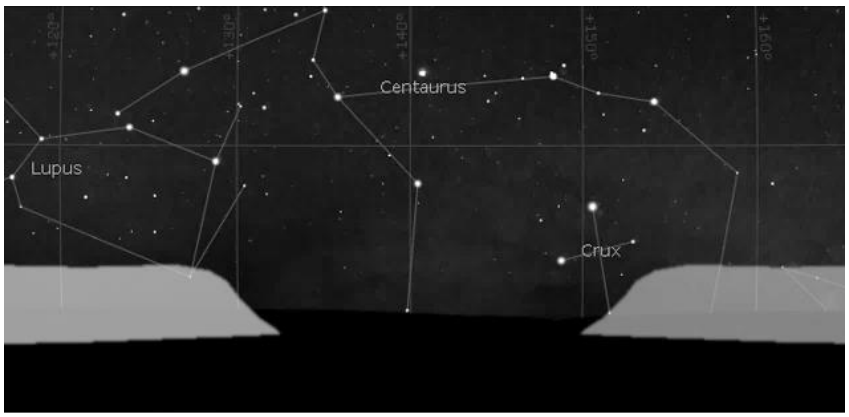
C. 4000 BC



South-eastern entrance 130°–152°: defines both the Midwinter sunrise and rising of Orion's Belt c.4000 BC



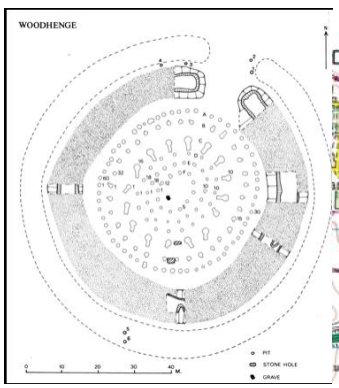
South-eastern entrance 130°–152°; rising of Sirius and Gacrux c.4000 BC

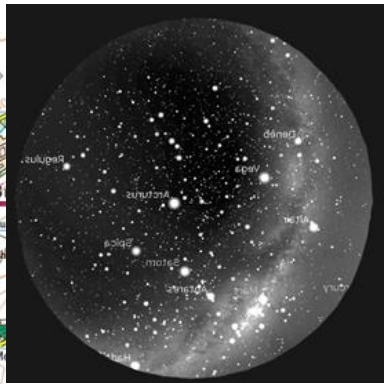


South-eastern entrance 130°–152°; rising of Acrux at 152° c.4000 BC

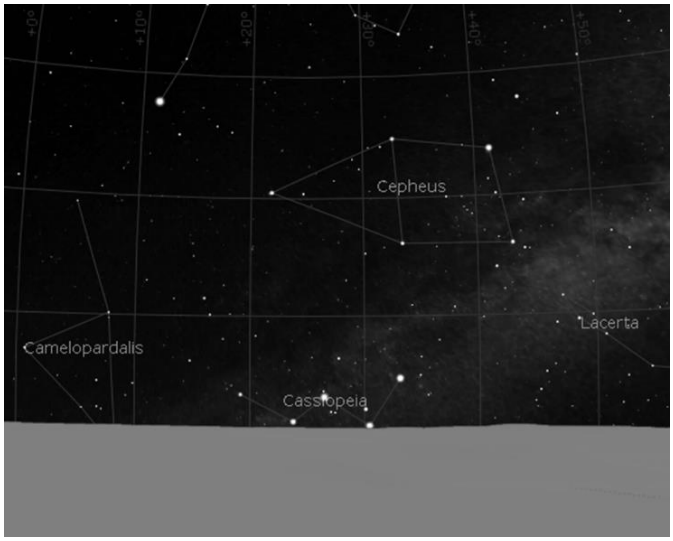
Woodhenge (Wiltshire)

2470–2030* BC (BM-677: 3817±74 BP) Antler pick from floor of ditch

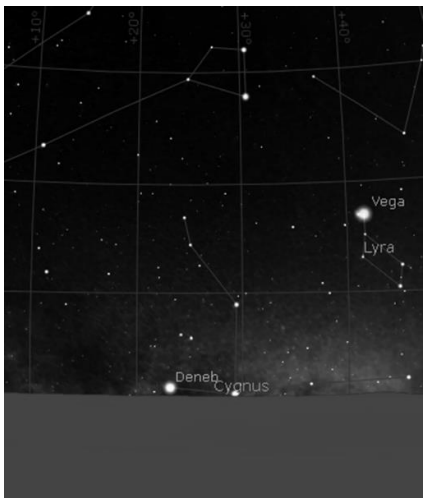


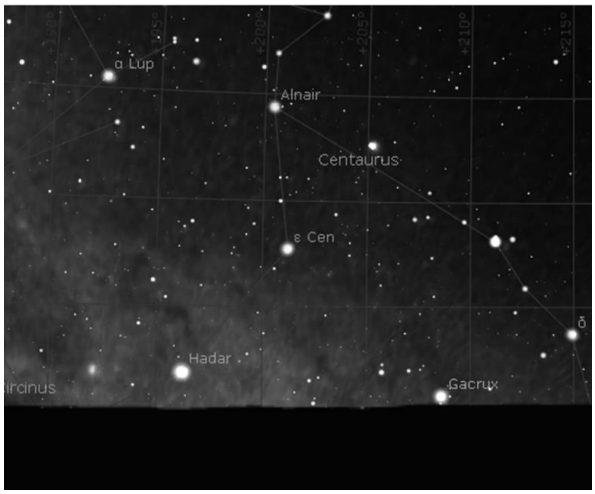


As Cassiopeia sits on horizon, rising



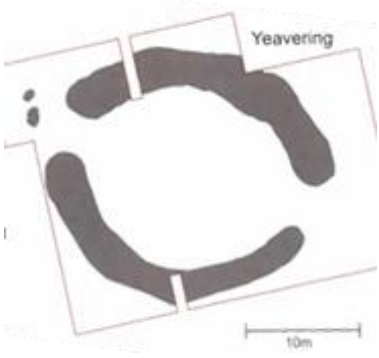
North-eastern entrance 15°–34° aligns to the rising of Cassiopeia c. 19°–32° c. 2400BC

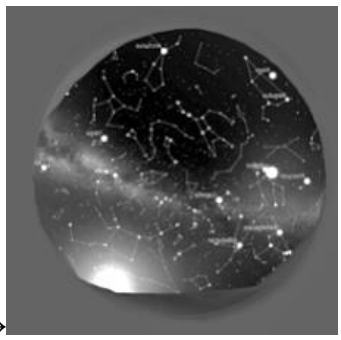


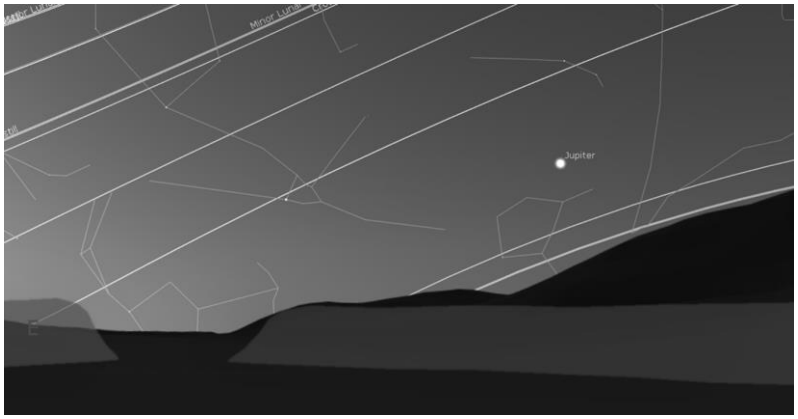


205°–225° (stone setting within timber monument): Setting of Gacrux 2700 BC (Still visible 2500 BC)

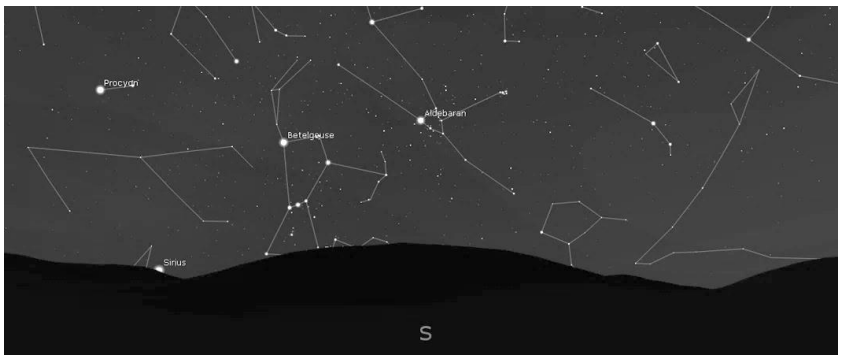
Yeavering (Northumberland)

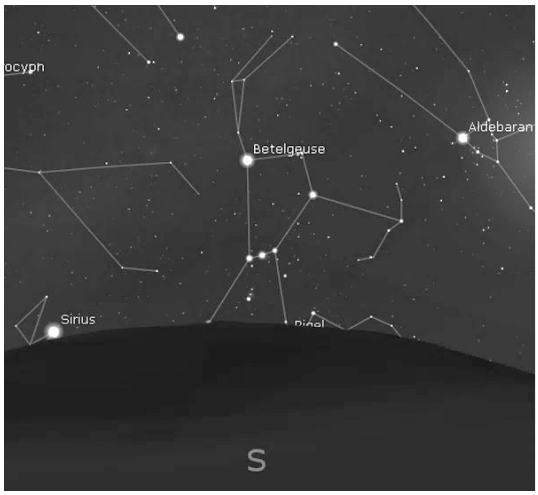


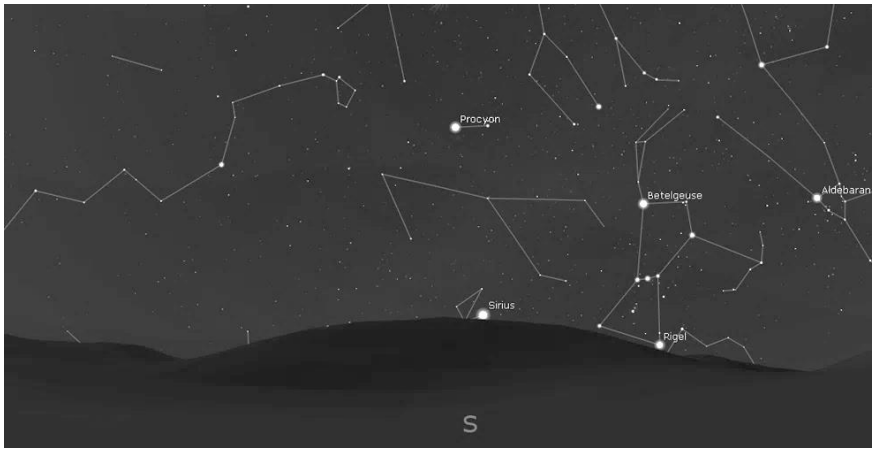


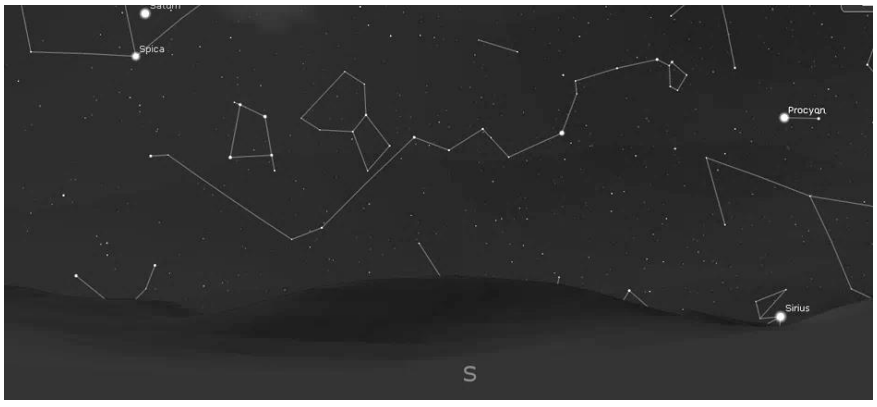


South-Eastern entrance 92°–112°: rising of Betelgeuse at 99° (heliacal rising occurs at the summer solstice c.2200 BC)

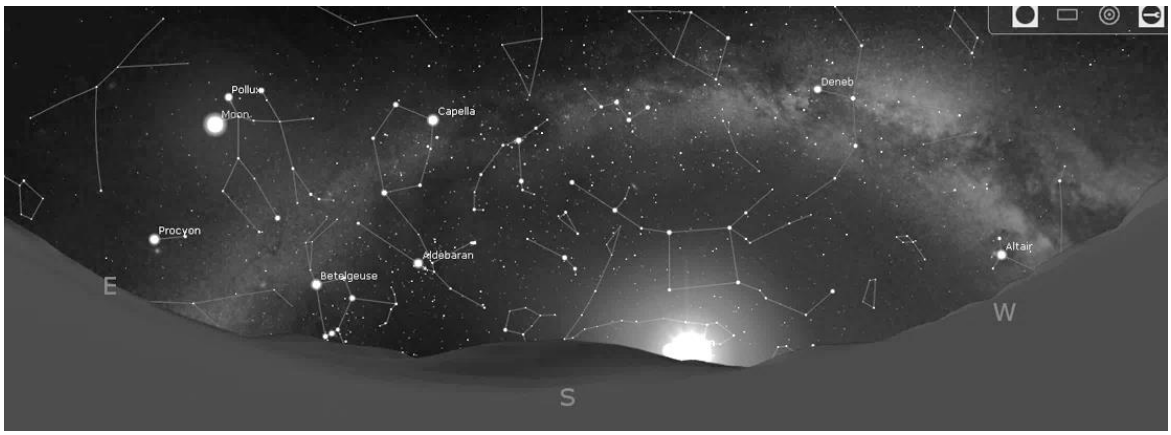








Orion ‘walks’ over Yeavering Bell followed by Sirius c.2200 BC



The henge entrances at c.92°–112° and c.283°–302° match the rising and setting points of the Milky Way just after the rising of the belt stars of Orion and as Cassiopeia reaches its highest point in the sky.