

ART. I – *Cumbrian stone circles, the calendar and the issue of the Druids*

BY STEVEN HOOD, B.SC. (HONS.)

ATTENTION has previously been drawn to various observable solar alignments at the three great Cumbrian stone circles; Long Meg and her Daughters (NY571373), Castlerigg (NY292236) and Swinside (SD172883)¹ and the purpose of this paper is to present additional evidence of alignments and further to discuss their possible relationship to the Iron Age Celtic calendar.

At the Long Meg site we find that the menhir, which is almost rectangular in section, has been placed about 25 m south-west of the circle with one edge facing toward the ring and each of its edges roughly indicating a cardinal direction. It is an impressive Triassic sandstone column around 3.8 m high, the south-west face of which is encrusted with crystal, it weighs somewhere in the region of 9 tonnes and is set on the higher part of the site with the land sloping down toward stone 1 which is approximately 6 m lower. The effect of the Samhain sunset shadow-path of Long Meg is seen as the lengthening of the shadow through the standing portal stones reaching across the circle, where it covers the mid-lower portion of the inner face of stone 9 (Fig. 1). This occurs when the sun is at an azimuth of around 239°. The shadow-path begins its interaction with the middle of this, the largest stone in the circle, on 2-3 November culminating around the 6 November. On this day from a vantage point at stone 9 the sun can be seen to slide down the top of portal stone 38 and into Long Meg (Plate 1), reappearing briefly between Long Meg and portal stone 37. By the 7 November the sun is setting into portal stone 38 with only the upper limb visible over the top of the stone, which again is seen to slide down into Long Meg before sunset. Figure 2 illustrates the track of the sun and its approximate positions in relation to the Long Meg stone as viewed from stone 9 over this period of days. From this viewing point for the first few days of the Samhain period, the sun would probably be visible setting into the circle's portal.

At Imbolc, as we come out of Winter and into Spring, the process above is completely reversed occurring about half an hour later in the day, the shadow-path of Long Meg shrinks back down the middle of stone 9 over the evenings from around the 4-8 February. By the 9th the shadow-path is not cast onto the middle of stone 9 but only reaches toward the bottom.

Other observations of the circle were made and the Samhain/Imbolc sunrise can be seen at around 07.34 hours looking from stone 51 to stone 17 on the plan. The sun rises out from a notch on the horizon with an approximate azimuth of 119° (Plate 2) this complemented a previously witnessed Beltane/Lughnasadh sunset alignment at Long Meg, occurring at 20.45 hours from stone 13 across to stone 52. Plate 3 gives an indication of the sun's movement as it slides down stone 52 into the horizon.

Continued studies at Long Meg gave rise to new findings regarding certain stones of the circle. Reading the available literature there would appear to be no mention of the fact that some of the circle stones are different to the others, yet it is true that of the 68 circle stones, erratic or not, there are indeed four which are composed of quartz crystal (Plates 4 and 5).

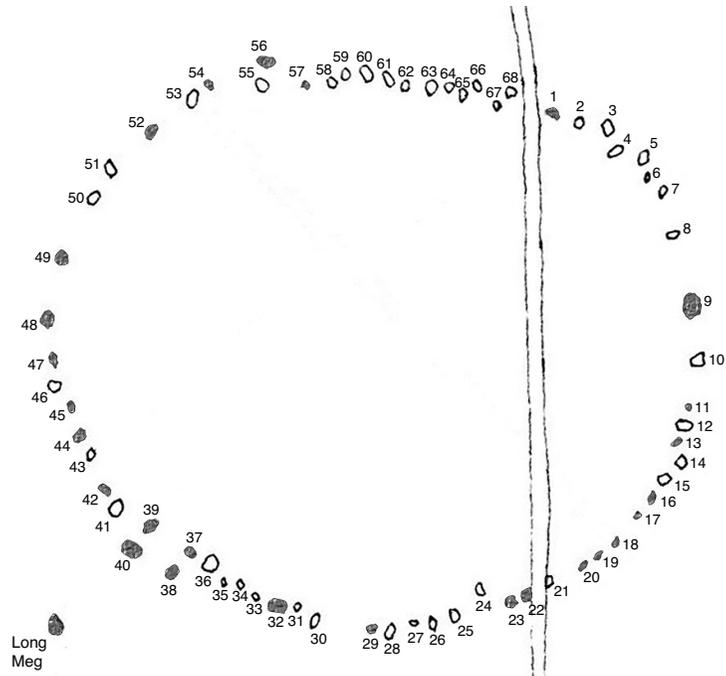


FIG. 1. Long Meg circle



PLATE 1. Long Meg Samhain/Imbolc sunset.

To watch the Equinox sunrise one stands at stone 48 and looks across the circle to fallen stone 10 seeing the sun ascend over Melmerby Fell. The Equinox sun sets at an azimuth of around 269° and is witnessed standing at stone 10 looking in the opposite direction back over to stone 48 (Plate 6). Unfortunately there are two trees growing in the circle's vicinity which seriously interfere with the visibility of these alignments. At Beltane the sunrise is viewed from stone 44 across to stone 7 which has fallen and appears to be half buried. Here the sun rises at an azimuth in the region of 64° at 05.55 hours and the Midsummer sunrise alignment may be seen from stone 42 over to stone 2. Midsummer sunset is then viewed at an azimuth of approximately 312° from stone 18 to stone 53, which sadly has also fallen. Reaching this extreme position, the sun then turns back again, during Lughnasadh returning to rise over stone 7 as it heads back for the Autumnal Equinox and stone 10.

This highlights an interesting possibility about these "crystal stones", numbers 2, 7, 10 and 53, being that their positioning in the circle could perhaps be deliberate. Is it plausible that one of their functions could be to mark out the positions of the sun throughout the light half of the year? If it were the case then it would be interesting to know where these stones originated. Could it be that like Long Meg, which was brought from across the river Eden, these crystal stones were specifically chosen? The association of quartz with prehistoric monuments has been documented a number of times, for instance at Croft Moraig stone circle in Perthshire, excavation revealed that the entire site had been covered in quartz.²

Midwinter sunrise was observed from a position at stone 52 looking across the circle to stone 20 where the sun rises with an azimuth of approximately 133° at around 08.38 hours. The opportunity for closer examination of the Long Meg sunset shadow-path at Midwinter provided deeper insight into the event. Standing at Long Meg it can be seen that when the shadow-path begins to move from stone 1 the entire space within the circle goes into shadow,³ but the shadow tip can still be followed beyond the outskirts of the circle moving in an easterly direction toward stone 2 as the light dissipates. As with all other alignments however, this one should also be viewed across the circle whilst looking in the direction of the astronomical body and from a position at fallen crystal stone 2, the Midwinter sun sets into Long Meg and portal stones 39 and 40 (Plate 7). Unfortunately these portal stones have fallen making interpretation rather problematic, but it does not seem implausible that when standing they may have functioned in a similar fashion as the other portal stones do during Samhain/Imbolc period, i.e. by concealing portions of the setting sun from view.

The Midwinter sunset at Long Meg presents another important alignment which utilises one of the crystal stones, but the more remarkable thing is that this is a stone which is also employed in the Midsummer sunrise alignment, meaning that crystal stone 2 is involved in the alignments of the two extreme solar points during the year. It is incorporated into the sunrise on the longest day when the sun is at its most northerly rising position and sunset of the longest night when the sun is at its most southerly setting position. Might this be interpreted as deliberate? It could be, however, as with the portals at these circles, that we should not preclude their involvement in lunar alignments.

In truth, the possible use of the crystal stones would not be seen unless using the suggested mode of viewing. The method of standing outside the circle and looking

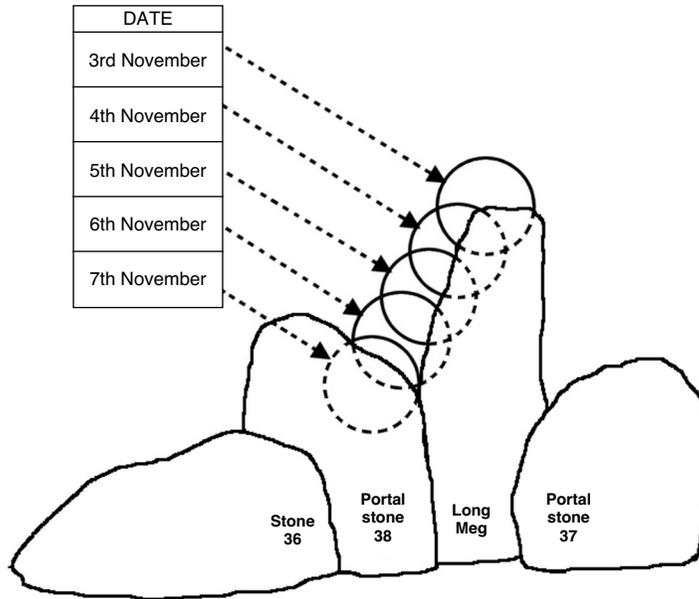


FIG. 2. Long Meg and approximate sun positions around Samhain sunset.

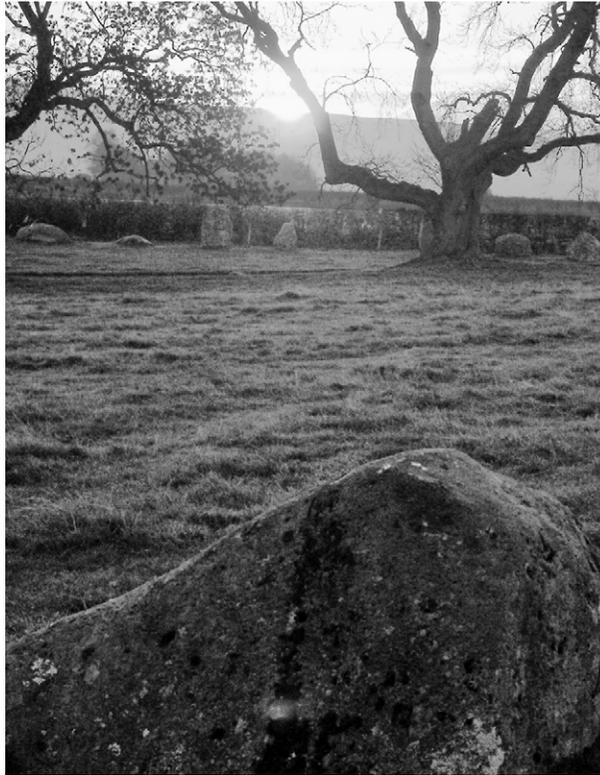


PLATE 2. Long Meg Samhain/Imbolc sunrise.

transversely from one stone to another may be relatively simple, but it would appear to work at the three great Cumbrian circles and on another level, it could be said to maintain the sanctity of the circle, for whilst viewing an event, one stands at the edge looking across a sacred space.

At Swinside stone circle (Fig. 3) the Beltane/Lughnasadh sun rises at about 05.54 hours and is viewed from a position standing at fallen stone 40 looking to stone 9 (Plate 8). Then later, at 19.01 hours the Beltane/Lughnasadh sunset occurs looking from the “V”-like join of stones 13 and 14 over to stone 44. The Equinox sunrise alignment is to be seen from a position at stone 43 watching the sun rise out from the horizon above stone 12. Unfortunately, both these stones are now leaning into the circle. Equinox sunset was seen to occur at around 18.04 hours viewed from stone 12 across to stone 40 and is an early event, as with other sunsets and moonsets at Swinside, due to the immediate presence of Swinside Fell, Gray Stones and White Combe stretching from the north-west to the south-west.

The idea of studying the three great Cumbrian circles with their various environs *en masse* provides an opportunity to give a little consideration to the concept of coincidence. The sites are spread over a distance – almost the length of Cumbria – their horizon features differ dramatically, for instance the Equinox sunrise at Castlerigg occurs almost half an hour later than the Equinox sunrise at Swinside and Midwinter sunrise at Castlerigg occurs almost three-quarters of an hour later than at Long Meg and Swinside, so varied are their horizons. Yet the observations, taken at specific times of the year at each circle, indicate that there are indeed alignments which can be witnessed across the circles and could be interpreted as common



FIG. 3. Swinside circle.

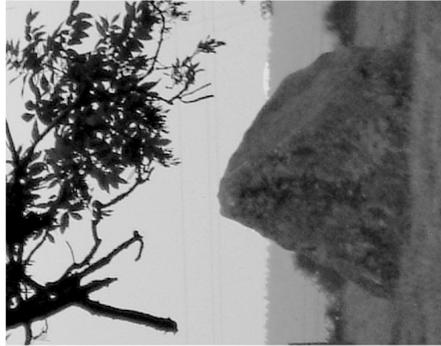


PLATE 3. Long Meg Beltane/Lughnasadh sunset.

trends in this local group of monuments.

In fact at Swinside, Castlerigg and Long Meg, there appears to be what might even be termed an “Equinox stone” on the east side of each circle – that is a stone which is involved in both the sunrise and sunset alignments on this specific day. At Long Meg it is a white crystal stone, at Castlerigg⁴ it is a spiral marked stone surrounded by the unique “cove” feature and at Swinside, the stone stands somewhat alone in the unusually large gap on the eastern side of the circle. Something which should be considered simultaneously is the fact that the sun is moving at its greatest rate across the horizon during the Equinox, with its path displaced from that on the previous day by around three-quarters of the sun’s diameter. So is the “Equinox stone” pure coincidence or could it possibly be a design feature?

The question of coincidence and the Celtic calendar

The regular occurrence of these solar alignments could suggest the possibility of a calendar with eight divisions of the year, one which may have been in use throughout Cumbria during the Neolithic and Bronze Age. Terms such as Samhain and Imbolc, Beltane and Lughnasadh would not be considered Neolithic, but then neither are Solstice or Equinox. However the nomenclature has been utilised here, extracted from the concept of a single “Celtic calendar”, in order to present a familiar indication of these particular periods of the year, which may not always be just a single day but more a modest number.

To address this further, it must be stated clearly at this juncture that there is no evidence for a direct connection between the Iron Age “Celtic calendar” renowned from Ireland and the Neolithic or Bronze Age. Here in Cumbria, these alignments occurring across the three great stone circles might be judged as adding weight to the debate. But first it should be considered as to what evidence there is for the celebration of these early festivals in Ireland and Cumbria.

For a succinct Irish reference we can look at what is considered to be ninth or tenth century Irish poetry. There is a poem dealing with the four great festivals which are of native and not ecclesiastical origin. Translated by Meyer⁵ it reads:

I relate to you, the surpassing festival, the privileged dues of Bealtain; beer, roots, mild whey, and fresh curds to the fire.

Lughnassad, tell of its dues of every distant year, trial of every glorious fruit, food of herbs on Lughnassad day.

Meat, beer, nut mast, chitterlings, they are the dues of Samhain; a merry bonfire on the hill, buttermilk, fresh-buttered bread.

Trial of every food in order, this is proper at Imbolc; washing of hand and foot and head; it is thus I relate.

In the ninth century *Sanas Chormaic* (Cormac’s Glossary) was written and it contained etymologies and the explanations for over 1,400 Irish words. Etymologically, the work is thought of little value, but it is considered of great importance to the historian on account of the light it throws upon ancient Irish customs and institutions. In it we are told that the word “Oimelc” is derived from ói – a sheep and melg – milk. “óí-melg ‘ewe-milk’, for that is the time the sheep’s milk comes”,⁶ but it is generally believed that the correct etymological standard form of



PLATE 4. Long Meg crystal stones.



PLATE 5. Long Meg crystal stone 10 close-up.

the word is gained from “imb” meaning “around” and “folc” meaning “bathe”, hence to “bathe all around”, raising the question as to whether Imbolc was a festival of cleansing and purification. It is interesting to note that February 2-14 (II Februarius ad XIV Februarius in the pagan Roman calendar) were sacred to Juno Februra, mother of Mars and that this was the Roman festival of purification during which there was a candle procession of Ceres.

In Ireland, Imbolc was sacred to the goddess Brigid, daughter of the Dagda. Attempts to make connections between the Irish triple Goddess Brigid and Brigantia of Northern Britain have been made.⁷ In Cumbria we find place names like Bridekirk, Brigham and Kirkbride and it has been suggested that the Roman site at Kirkbride, on the Solway southwest of Carlisle, may even have been called Briga.⁸ Along with this there are also some churches which are dedicated to St Bridget, for instance at Beckermet and Moresby.

The true life of Brigid is surrounded by folklore. One popular Celtic tradition said that she helped Mary to nurse the Child and when Mary was fit enough to walk to the Temple to present the infant Jesus, that Brigid walked before her with a candle in each hand, and so it is that St Brigid is associated with Candlemas in February, when all candles are blessed. After this St Brigid was the friend of mothers and babies. With the introduction of the Christian calendar *Féil Brighde*, the feast of St Brigid, occurs around the same time as Imbolc.

Beltane is generally thought to be near the start of May and the Irish word for May is “Bealtaine.” It is understood to mean either “fires of Bel” or “bright fires,” Cormac’s Glossary implies “a goodly fire”. Writing in the late eighteenth century, Thomas Pennant⁹ makes reference to the fact that in Cumberland:

Till of late years the superstition of the Beltain was kept up in these parts; and in the rural sacrifice it was customary for the performers to bring with them boughs of the mountain ash. The berries of this mystic tree were the ambrosial food of the Celtic gods of Ireland.

This could be taken to indicate that the people in what is now Cumbria were actually following the same festival calendar as that known in Ireland. A further interesting etymological point may be raised regarding the numerous finds of Romano-British altars in Cumbria which are dedicated to the local deity, Belatucadros. There have been over twenty such altars discovered; found as far afield as Maryport, Bewcastle and Kirkby Thore.¹⁰ Endeavours to translate the word Belatucadros have resulted in interpretations such as “Fair Shining One” and “Bright Beautiful One”.¹¹

It should be noted that whilst a small number of the altars associate the Roman god Mars with Belatucadros, the majority of them do not. That said, one could follow an association with Mars a little further and consider the happenstance that although Mars is often regarded as a god of war there were various annual ceremonies held in Pagan Rome which indicate that he was certainly also an agricultural deity with a concern for the protection and productivity of crops and livestock. Indeed the preserved blood of the horse sacrifice from the chariot race on the Fields of Mars in Rome was distributed by the Vestal Virgins in late April and it was then burned and used by shepherds to fumigate their flocks as a protection and to ward off disease. The Beltane fire festival occurred around the beginning of open pasturing and in his Glossary, ninth century Irish writer Cormac MacCuilenan

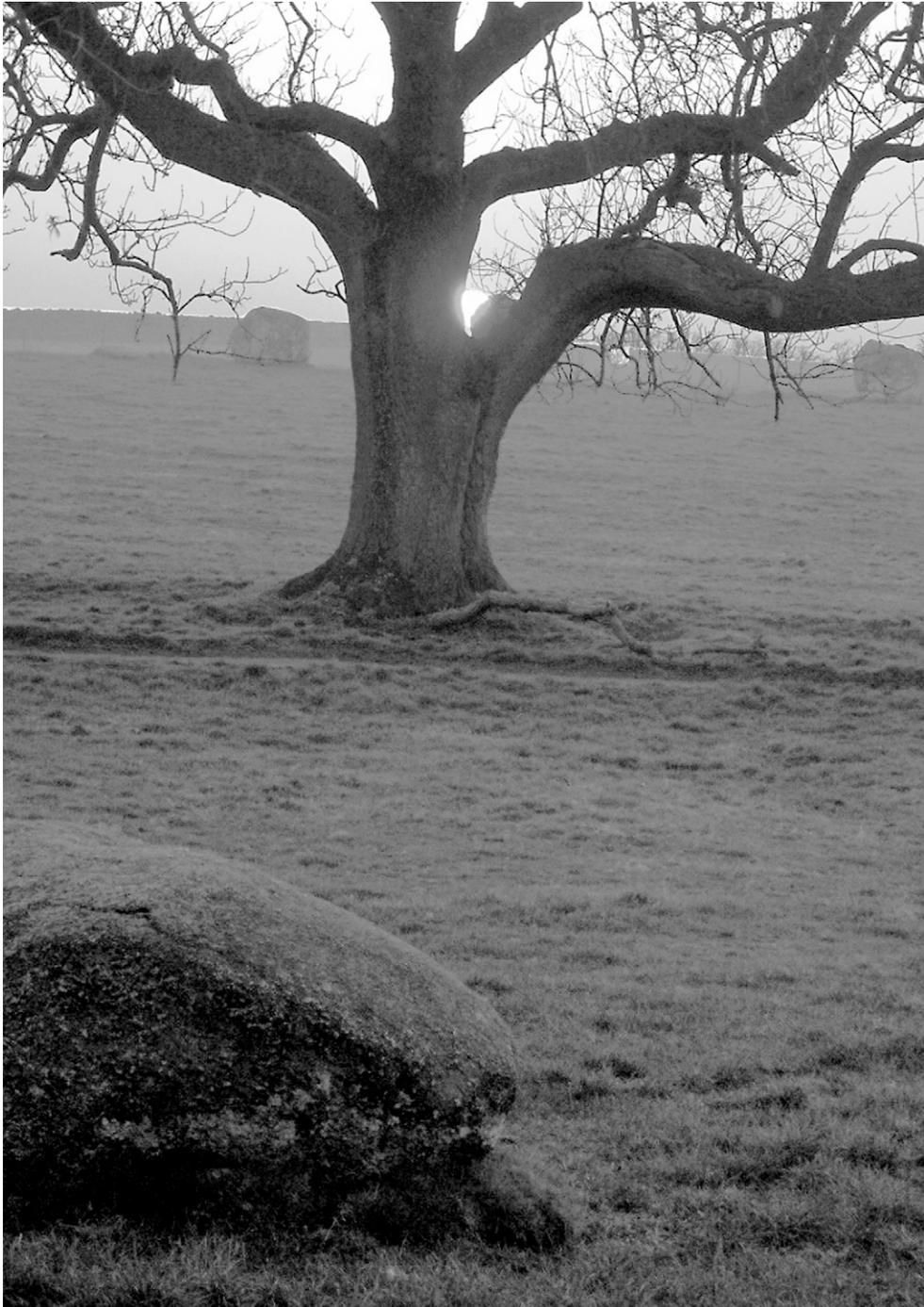


PLATE 6. Long Meg Equinox sunset.



PLATE 7. Long Meg Midwinter sunset



PLATE 8. Swinside Beltane/Lughnasadh sunrise.

speaks of it involving cattle being driven between two great fires as a protection against disease.

When considering the Irish festival of Lughnasadh, we see that the month of August is called “Lúnasa” in Ireland and it is connected with the harvest. Celebrations occurred at various places in Ireland from Tara, County Meath to Emhain Macha in Ulster. The actual day is said to be the 1 August but the festivities were known to last for a fortnight preceding and following it. Cumbrian folklore recalls Kirn suppers that were held after harvest each year¹² the final course of the meal being an oaten or wheaten cake. A further etymological note occurs in Cumbria where one’s attention might be drawn to the city of Carlisle, the only English city whose name maintains its truly Brythonic root. Carlisle was known as Luguvalium to the Romans, a name which is said to commemorate the Pan-Celtic God Lugh, a solar deity. During the Roman period in Lugdunum (now Lyons, France) there was a festival held around the beginning of August in honour of the God.

Samhain was the fourth major insular festival marking the end of summer and the beginning of winter in the Celtic calendar. The remarkable Irish tale of “The Wasting Sickness of CuChulainn & The Only Jealousy of Emer” is part myth and part history but the story opens on a historical note with a description of how the Ulaid (Men of Ulster) celebrated Samuin (Samhain), the annual end-of-the-year assembly.¹³ In Irish mythology the god Dagda made love to the Morrigan on Samhain eve, a symbolic union of the god of light and the goddess of death as the year turns towards darkness. Conchobar Mac Nessa, the King who had Tara built, was said to give a feast at Samhain that lasted seven days.¹⁴ The ancient Irish texts would seem to offer evidence for the celebration of Samhain. In A.D. 835 the church decreed that 1 November should be known as All Saints’ Day and All Souls’ Day was moved to the 2nd November. Thus the 31 October became All Saints’ Eve or all Hallows’ Eve with older customs and beliefs surviving throughout Britain. In Cumbria Hallowe’en fires were associated with the dead, the remembrance of ancestors and prophetic dreaming. A common theme, which is also found in Scotland, was the preparation and eating of the “dumb bannock”,¹⁵ in Ireland they were known as barm brack cakes and often contained lucky and unlucky objects of a divinatory nature.

What becomes apparent is that although there is an actual day to represent these four festivals, Irish evidence from the past would suggest the celebrations at these time periods actually lasted for a number of days.

Early connections between Cumbria and Ireland can be demonstrated by the discovery of two flakes of polished stone axes from the “factories” at Langdale which were found at the Ballygalley Neolithic house site in County Antrim, Northern Ireland.¹⁶ The prehistoric rock art of Cumbria has been considered a “special case” and it is noted that along with being exceptionally elaborate, the rock art tends to have more in common with the art of Irish passage tombs than other sites of mainland Britain.¹⁷

Tara, County Meath, was traditionally seen as a seat of Irish high kingship, with a chief assembly taking place there at Samhain and the other times of festival. The site is not defensive. Having a bank with an inner ditch, it surrounds the “Mound of the Hostages” which excavation has shown was actually a Neolithic passage grave, somewhat similar to those of *Brú na Bóinne*.¹⁸ Interestingly another great Irish centre

of royalty at Emhain Macha or Navan, County Armagh was similar to Tara in that the hill top was encircled by a single ditch with an outer bank. Excavation has shown that construction of Navan began around the seventh or eighth century B.C. but around 94 B.C. a complex construction of timber was erected which was later packed with stone. It has been suggested that the Navan site actually originated from a demolished Neolithic chambered tomb¹⁹ and it is known that the people of Iron Age Ireland revered these earlier monuments as revealed by the various old texts which make reference to the mystical *sid* mounds. The question remains as to whether these Iron Age festival gatherings at Irish Neolithic sites could be interpreted as a continued observance of festivals with much earlier dates of inception.

The three great Cumbrian circles have been considered as being amongst the earliest,²⁰ but what is remarkable is that many ancient cultures celebrated the time of the year we call Samhain as a festival of the dead, for instance in ancient Egypt the third month of the calendar is called “Athyr” (Hathor) and according to the great festival list in the temple for Ramesses III at Medinet Habu²¹ (Thebes) dated around 1150 B.C., the festival for Hathor took place on the first day of the 4th month “Kaherka” – which approximates with November. At Thebes the ancient sky goddess Hathor was associated with the necropolis and worshipped as a mortuary deity and in the myth of Osiris we find that the god died on the seventeenth day of the month of “Athyr.” In Rome, under the Empire, we find the *Isia* ceremonies which were celebrated in November commemorating the death and resurrection of Osiris, he was a deity of vegetation and the god who is both dead and resurrected symbolising the succession of the seasons. We have already witnessed above that there is evidence of other similarities between some of the celebrations in Pagan Rome and the four “Celtic” festivals. The observance of analogous events across various early cultures might be seen to indicate the continuance of festivals first conceived at an earlier period in human history, which have since been carried with Man as he populated the world but alternatively, they could be said to show that in various cultures comparable ideologies were conceived from the study of the cycles found in the natural world.

Counting the days

The dates of the alignments witnessed do closely correspond with some of those calculated in the cardinal work of Professor Alexander Thom.²² Looking at his division of the year into sixteen parts, but employing only his even numbered epochs, the similarity between these times and those of the Iron Age festival periods is noticeable in Table 1.

The differences between the azimuths expected on a flat plain and those at the actual site remind us to remain aware that there will be a variance in the azimuths of sunrises and sunsets in accordance with the features on the relative horizons of each site. Long Meg has been used here because it is the nearest of the three circles to the latitude of 55° which Thom used in his calculations. The dates from his computations were based upon a method of counting the days from a zero date in the year and they are found in the “Epoch” and “Month” columns in Table 1. What becomes immediately apparent with respect to the Cumbrian circles is a discrepancy

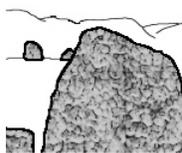
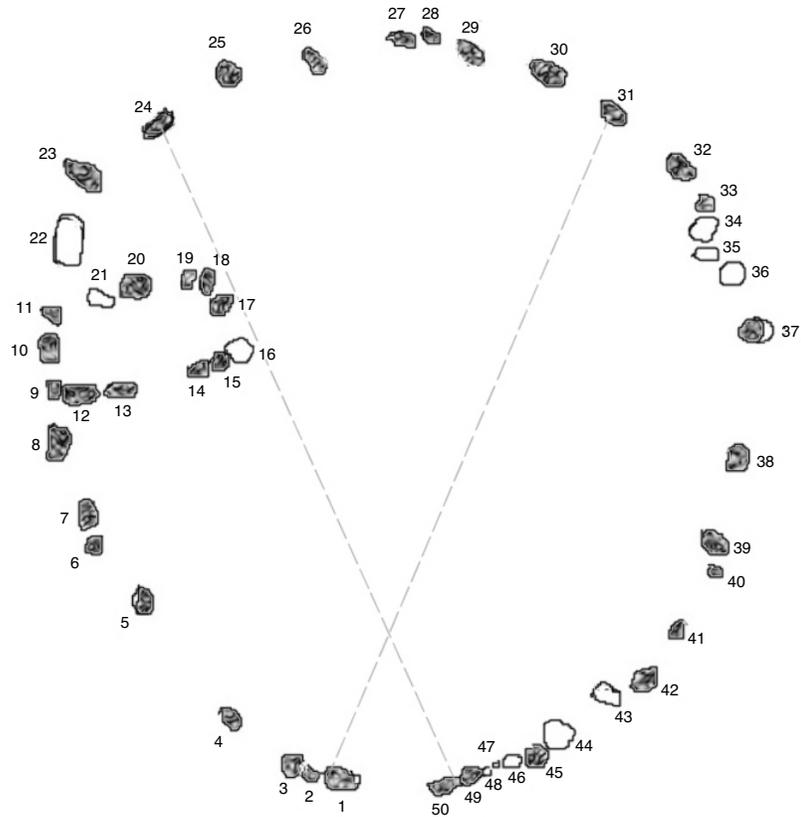
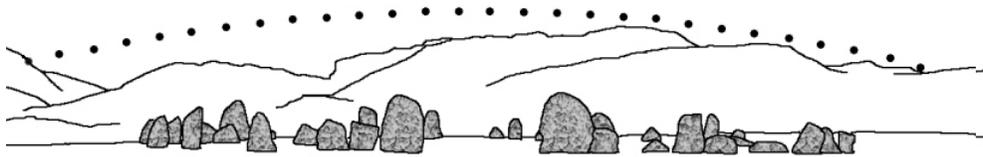
TABLE 1. Approximate solar azimuths, rising and setting, at Long Meg circle throughout the year. (The columns marked (Flat) provide the expected azimuths if the horizon at Long Meg was flat and featureless, the (Actual) columns provide the azimuths recorded.)

Thom's Epoch	"Month"	Sunrise Azimuth (Flat)	Sunset Azimuth (Flat)	Sunrise Azimuth (Actual)	Sunset Azimuth (Actual)	Iron Age Festival	Christian Festival
2	8 May	58°	302°	64°	297°	Beltane	Whitsun (?)
4	21 June	45°	315°	50°	312°	Midsummer Solstice	
6	9 Aug	60°	299°	64°	297°	Lughnasadh	Harvest
8	23 Sept	89°	271°	93°	269°	Autumn Equinox	
10	6 Nov	117°	243°	119°	239°	Samhain	All Souls'
12	21 Dec	132°	228°	133°	224°	Midwinter Solstice	
14	5 Feb	117°	243°	119°	239°	Imbolc	Candlemas
16	23 March	89°	272°	93°	269°	Vernal Equinox	

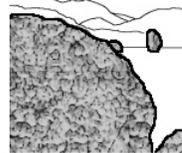
in azimuths between the 2nd epoch and those of his 6th epoch, which we would expect to be the same. We find at Long Meg that there is a difference in the flat plane sunrise azimuths of 2° when comparing 8 May with 9th August and that at sunset this variance increases to around 3°. Further investigation was hampered by inclement weather conditions and so took a number of years, but observation has indicated that the more comparable dates for these times at the three circles would be around 5th and 6th May and 8th and 9th August and the "Actual" results for these epochs in Table 1 reflect these amended dates. One fact we must always keep in mind, is that when counting days as Thom suggests, there would inevitably be a slight variance over the four years of the leap-year cycle due to the fact that the length of a year is not an exact number of days.

After having conducted his own survey of Castlerigg, W. D. Anderson presented some interesting observations of the circle in the 1915 volume of these *Transactions*.²³ He notes the valid contribution to the study of these sites which had previously been made by C. W. Dymond.²⁴ Anderson goes on to tell us that he had performed his own studies by "considering the circle from a Celtic standpoint" and further that "there is no equinoctial alignment at the Keswick circle", going on to provide alignments for the solstices and suggesting dates and alignments for the four major Celtic festivals. Professor J. Morrow had offered survey results and a plan of Castlerigg which were published in 1910,²⁵ making some readings to and from an outlying stone. The collected dates provided can be seen in Table 2.

In Table 2 the similarities and differences between the proposed dates are evident but one thing, which should be noted, are the relative positions from which alignments are observed. Anderson tells us that he, Dymond and Morrow have performed their calculations from the middle of the Castlerigg site, but he goes on to



View from stone 1 over to stone 31.



View from stone 50 over to stone 24.

FIG. 4. Castlerigg most southerly Moon positions.

TABLE 2. Approximate dates of alignments at Castlerigg stone circle and the relative Iron Age festivals as recorded by various authors. * Dates mentioned by Morrow but not actually specified as alignments.

Iron Age Festival	Morrow's Dates	Anderson's Dates	Thom's Dates	Observed Modern Dates
Samhain	4 November	5-6 November	6 November	6 November
Winter Solstice	23 December*	22 December	21 December	21 December
Imbolc	8 February	6-7 February	5 February	5 February
Vernal Equinox	21 March*	—	23 March	20 March
Beltane	26 April	1-2 May	8 May	5-6 May
Summer Solstice	21 June*	22 June	21 June	21 June
Lughnasadh	8 August	14 August	9 August	8-9 August
Autumnal Equinox	23 September*	—	23 September	22 September

explain the fact that all three of them have determined a different centre. We know also that Thom conducted his studies of Castlerigg from his own proposed mid-point. The potential for variance when searching for the middle of what in essence is not a geometrical circle is here so clearly demonstrated.

When considering the possibility of a calendar, the activity of the Moon must not be ignored and of course it should be noted that the word “Moon” is actually derived from an archaic term for “measurement”. Investigation of the decorated kerbstone SW22 from Knowth in the Boyne Valley has led to interpretation of the symbols as representing the lunar phase cycle.²⁶ It is argued that prehistoric observers probably could not have established the precise period of the 18.61 year lunar node cycle without observations stretching over several node cycles which would require a count of over 6,939 days. What should always be borne in mind though is that the minds that conceived the stone circles were equivalent in function to those that send rockets to the Moon today. The Athenian Meton (around 430 BC) calculated the length of time which was required for the equalisation of the synodic and the tropical lunar periods. He found that 235 lunations are equal to 254 tropical revolutions and after the completion of one *Metonic cycle* the Moon stands in the same phase on the same date. However this may vary with our calendar by one or two days depending on the number of intervening leap years.

The movement of the Moon is thus more complex than that of the Sun. Where the Sun takes a year to complete a cycle the Moon takes only a month with its rising and setting moving swiftly. The Moon's extreme rising and setting positions in the north and south take 18.61 years to achieve and would have required years of observation to locate the standstills precisely. The Moon doesn't actually standstill at this time, but for about a year, month after month, its declination goes through almost the same cycle. That said, we find some curious alignments involving the large northern portal stones at Castlerigg, which Aubrey Burl considers “may be one of the earliest circles in the British Isles”.²⁷ Figure 4 shows the circle as viewed from the North and has a diagrammatical representation of the track of the Moon at its most southerly extreme

along with the stones involved in these alignments. Standing at portal stone 50 and looking across to stone 24 we see an alignment with the extreme southerly rising position of the Moon and when looking from portal stone 1 over to stone 31 we find alignment with the extreme southerly setting position, which occurs on that same day. The use of the large portal stones and small stones 24 and 31, which themselves are framed within the circle by larger stones on either side, exhibits an elegant symmetry within the structure and emphasises the various lunar alignments possible at these circles, which certainly do necessitate further investigation.

Druids

It must be stated clearly that there is no historical evidence for a direct connection between Druids and stone circles, yet it might be thought a travesty to discuss aspects of the Iron Age Celtic calendar and not make some reference to the Druids; indeed Anderson raises the topic very early in his own paper when he deals with the issue of the old name for Castlerigg which he tells us was “The Druid Circle”. The ancient Irish texts of around 5th Century A.D. certainly make reference to Druids and from an ogam inscription dated to the 5th or 6th century A.D. found on a sandstone slab at Port St Mary on the Isle of Man²⁸ it is alleged that there is proof of their existence. One can scarcely mention Druids without the allusion to mystery, magic and sacrifice which for the most part is due to the works of the Classical writers. Pliny the Elder’s remarks are not too positive, for instance when discussing Druids in his *Natural Histories*, Book XXX, he says:

At the present day, Britannia is still fascinated by magic, and performs its rites with so much ceremony that it almost seems as though it was she who had imparted the cult to the Persians. To such a degree do peoples throughout the whole world, although unlike and quite unknown to one another, agree upon this one point.

A 14th Century Irish translation of Nennius’ *Historia Britonum* uses the word “Druid” where the word “magi” appears in the original text. It is often thought that the word Druid is derived from the Indo-European “dru” meaning oak, but some think that Druid means “wisdom”. The connection of Druids and oak trees was made early. The Welsh word “drew” means oak and poems of Early Welsh Bards offer the word “Derwydd” for Druid. In Cumbria we have the river Derwent, which was called Derwennydd around A.D. 600 and is understood to mean “oak-river” or “river in the oak wood”, it is a waterway most renowned for its Salmon. The Roman fort at Papcastle is sited on the banks of the river and was called Derventio, which would indicate that the river’s name existed before the Romans arrived and after consideration over the entries in the *Notitia Occidentis* section of the *Notitia Dignitatum* (“register of offices”) it has been suggested that the Roman fort at Workington, which would have been situated at the mouth of the river, may have been called Magis. There are around 20 Roman forts known to have existed in the Lake Counties area and excavations at some of them have revealed quite a number of altars dedicated to local deities.

We know from Diocletian’s “Edict of Prices” that the woollen cloaks of Britain were considered of high quality and a particular Romano-British image is that of the three cloaked and hooded figures, commonly named *genii cucullati*. A number of

these sculptures have been found in Cumbria and that discovered at Burgh-by-Sands, now in the Tullie House Museum, Carlisle, presents the three, each holding something which appears similar to an egg, in their right hands. An open question must be raised as to whether these figures might represent Druids.

Cyndeyrn Garthwys was the given name of St Kentigern. He was educated by St Servanus and given the pet name “Munghu” which is Brythonic for “my dear”. The *Life of St. Kentigern* by Jocelin of Furness was written c.1185 and in it we are told:

And when Kentigern had arrived at Karleolum (Carlisle), he heard that many in the mountains had been given to idolatry or were ignorant of the divine laws. And so he turned aside to that place, and he converted to the Christian religion, with the aid of God and confirming this word with accompanying signs, many who were strangers to the faith and others who were erring in the faith.

This would indicate that the old religious beliefs of the area were strong and continuing around Cumbria for some time after the departure of the Romans and even after the introduction of Christianity. St Kentigern met St Columba at the Molendinar Burn, where they talked as friends and exchanged croziers, in A.D. 584. Adamnan, Abbot of Iona, wrote his *Vita Columboe* in the last decade of the seventh century: it is dedicated to the life of St Columba who was so evidently hostile to the Druids. It is from St Columba that we have the now famous statement, “*My Druid is Christ, the son of God*”.²⁹ Works of the earlier Roman authors and early Christian texts certainly do suggest that there has been a concerted effort to demean and eradicate the Druids along with their religious practices.

It is Julius Caesar’s assessment in Book VI of his *De Bello Gallico*³⁰ (Gallic War) which is considered the most informative account of the Druids. He encountered them while Roman governor of southern Gaul during the 50s B.C. From the above dates we have an indication that the Druidic system persisted for at least 600 years, but Diogenes Laertius hints that the Druids were an early conception when in his *Vitae, intro.* I he writes:

Some say that the study of philosophy was of barbarian origin. For the Persians had their magi, the Babylonians or the Assyrians the Chaldeans, the Indians their Gymnosophists, while the Kelts and the Galatae had seers called Druids and Semnotheoi, or so Aristotle says in the “Magic”, and Sotion in the twenty-third book of his “Succession of Philosophers.”

Sotion of Alexandria is estimated to have been writing around 200 B.C. which would imply that the Druids were at that time already of some renown. Caesar himself does make some very interesting statements about Druids in *De Bello Gallico*:

It is believed that their rule of life was discovered in Britain and transferred hence to Gaul; and today those who would study the subject more accurately journey, as a rule, to Britain to learn it.

We can assume from the above that Druids were well established in Britain prior to Caesar making any of his observations around 52 B.C. We also find from the great Irish epic *Táin Bó Cúalnge* that Fedelm, a Druidess, has also been to Britain to study, but Caesar goes on:

Report says that in the schools of the Druids they learn by heart a great number of verses, and therefore some persons remain twenty years under training. And they do not think it proper to commit these utterances to writing, although in almost all other matters, and in their public and private accounts, they make use of Greek letters. I believe that they have adopted the practice for two reasons – that they do not wish the rule to become common property, nor those who learn the rule to rely on writing and so neglect the cultivation of the memory . . . Besides this, they have

many discussions as touching the stars and their movement, the size of the universe and of the earth, the order of nature, the strength and powers of the immortal gods, and hand down their lore to the young men.

From this one could deduce not only an importance placed on memory but also on the spoken word, themes which we see continued until at least A.D. 600 throughout the time of the exquisite poetry of Taliesin, bard of Urien Rheged.³¹ The territory of Rheged is believed to have consisted of Cumbria along with lands around the Solway, and the poems of the highly respected Taliesin are considered to have been composed in Cumbric and to be some of the earliest known literary works emanating from Britain.³² A more relevant section is Caesar's mention of Druidic discussions of an astronomical nature. We find similar allusions in other Classical works, for instance that of Pliny the Elder in his *Natural History*, where he makes the now infamous statement about the Druidic collection of mistletoe in Book XVI and says:

. . . The mistletoe, however, is found but rarely upon the oak; and when found is gathered with due religious ceremony, if possible on the sixth day of the Moon for it is by the Moon that they measure their months and years and also their "ages" (SAECULI) of thirty years. They choose this day because the Moon, though not yet in the middle of her course, has already considerable influence . . .

Later in Book XXIX when discussing the Druid's serpent egg, which might momentarily draw ones mind to the infamous Serpent stone at Maryport, Pliny states:

. . . they pretend that these eggs can only be taken on a certain day of the Moon, as though it rested with mankind to make the Moon and the serpents accord as to the moment of the operation.

In the Irish text *Bethu Brigitte*, an early Christian account of Saint Brigit's life, we are told that a Druid rears the saint after buying her mother who was a slave. On one occasion when the Druid was star-gazing at night, as was his custom, he saw a pillar of fire coming from the hut in which the child and her mother were asleep, but as is often the case through the story, the flames leave Brigit unscathed. So here again we see another reference to Druids and a study of the heavens. We know from Pliny that "it is by the Moon that they measure their months and years and also their 'ages' of thirty years" and if we take this at face value it implies that Druids would have to be fully aware of lunar cycles. However, closer scrutiny of this provides a quandary. If we consider the observable conditions of the Moon around Midwinter from a set location, here we shall use Castlerigg and we will assume a flat horizon, the amount of lunar variance over a thirty year age is demonstrated in Table 3.

The question therefore arises as to what specific feature of the Moon is discernible in a thirty year period? Rising positions are different, the phase also differs and the rising times will not be the same from one "age" to the next. Eclipse cycles do not fit either and from Ptolemy's *Almagest*, published around A.D. 150, we know that "the ancient astronomers" and the "even more ancient astronomers" had been working on what they called the "Periodic of the Moon", endeavouring to figure out lunar motion and anomaly. But we do not know to whom Ptolemy refers except that these astronomers were earlier than the celebrated Greek astronomer Hipparchus who flourished around 160-145 B.C. The "Periodic", an interval of

TABLE 3. Midwinter Moon rise time, azimuth and phase over Pliny's Druidic "ages" of thirty years, if the horizon at Castlerigg was flat and featureless.

Solstice Date	Rise Time	Azimuth	Phase	Constellation
22 December 1974	11.49	77°	56 %	Pisces
21 December 2004	13.00	67°	77 %	Aries
21 December 2034	13.35	73°	79 %	Cetus
21 December 2064	13.29	42°	95 %	Taurus
21 December 2094	15.32	47°	99 %	Taurus

6585.33 days, was thought to be the smallest single period with an integer number of returns of the various lunar motions and was well-known in Babylonian astronomy.

Watching the lunar cycle over a 30 year time span would provide the observer with the opportunity to witness the Moon completing a Metonic cycle which could for instance see the Moon go from its most southerly rising position to its minimum southerly rising position around nine years later, then return to its most southerly rise with the whole cycle taking 18.61 years. If we assume that the Druids were aware of the lunar cycle then they would not have failed to notice that there are in fact two standstill rising points in the south, one the extreme southerly rising position and the other the minimum southerly rising position and as seen above, a Metonic cycle would see the Moon visit only one of these positions twice. So might the Druids have watched the Moon for a further nine years and thus witnessed it making a double visit to both of these standstill points? This would take approximately 28 years to complete and with regards to lunar observations could offer a possibly recognizable rotation which could be termed as an "age".

If we return to the ancient Egyptian myth of Osiris for a moment, we find that some believe the god to have had lunar associations and that Osiris lived or reigned for twenty-eight years, which has been considered the mythical expression of a lunar month.³³ But we also find that there is a cycle in the Islamic calendar of 30 years which is called a "small cycle" and is equal to 10,631 days. There is no effort to link the Islamic calendar with the solar year and Islamic months do not correspond with particular seasons. In the solar calendar the number of days in a month varies from 28 to 31, but a lunar month is not less than 29 days or more than 30. In the Islamic 30 year cycle the 29-30 days duration of the month are repeated in the same order as they were 30 years ago. However, the rising azimuths of the Moon would certainly change each time. This is a counting method and together these two possibilities stress the difficulties of understanding what factors may have been considered important by the Druids in order to create their "30 year Age".

From the Classical reports we know the Druids paid particular attention to the Moon and that Caesar mentions Druidic studies of twenty years, so it is rather interesting to note that this is similar to the period of time it would take one to experience a full Metonic cycle and gain awareness that it was essentially part of a continuous pattern.

It is said that as viewed from the Mittleberg, a 252 m hill in the Ziegelroda Forest, Germany, the sun happens to set behind the Brocken, Northern Germany's highest mountain, on 22nd June. The "Nebra Disc" was discovered at a site on the

top of Mittelberg and it has been estimated as being around 3,600 years old and interpreted as observance of solar, lunar and stellar features in Northern Europe. The building of stone circles appears to have stopped around the end of the Early Bronze Age but the common theme of ancestor worship is seen from the Neolithic through to the Iron Age and so we certainly cannot preclude a reverence by Iron Age people for the great stone monuments of the Neolithic and Early Bronze Age.

One question that should be seriously considered is whether it is more plausible that the knowledge and importance of the Sun, Moon and stars which the stone circle builders possessed was lost and wholly disregarded throughout Britain for a few thousand years and then somehow rediscovered by the Druids, who just happened to place similar worth on specific times of the year which are also indicated by the alignments at these stone circles, or whether it is more likely that there was a continuance of solar and lunar observation, that the importance of the Sun and Moon was not neglected nor forgotten but remained an appreciably significant factor to these early agricultural societies and that this knowledge was thus passed down through the ages to the younger generation as indeed Caesar has suggested was the case at the time of his interaction with the Druids.

Landscape and context

When viewing the effects of a rising or setting astronomical body then the shape of the horizon has an obvious impact on what is actually seen and it is not infeasible to suggest that this could have been of some import to the builders of the circles. A question often asked is why the circles are positioned at their specific locations and this is something we may never truly know, but we might think about Castlerigg and its site, how it is surrounded by mountains and valleys, how once there was a tarn below it in Naddle valley.³⁴ Or we could look at Long Meg and how all sunrises occur across the tops of the Pennine range, or how the builders have taken advantage of the lie of the ground, making use of this slope down toward the north and north-east, which can be seen to form an immediate skyline to the south-west as viewed across the circle. At Swinside looking toward the south-east there are two distinct notches on the horizon and we find that the Midwinter and the Imbolc/Samhain sunrises ascend from these two positions. Could it be that such factors were important in the choice of site location? The writer has already alluded to the potential significance of Blencathra from Mayburgh Henge, the largest of the three henges at Eamont Bridge.³⁵ The positioning of the henge between the rivers Lowther and the Eamont gives a considerable view of the distant horizon, but once inside the structure, the bank which is composed of stones taken from the nearby riverbeds, obscures the vast majority of the horizon from view with the rising and setting points of the equinox sun more or less framed.

We find that the Lakota people of South Dakota have an oral tradition which is said to link their annual ceremonies and seasonal migration through the Black Hills with the position of the sun in certain constellations, which are themselves associated with elements of the landscape.³⁶ The Hopi of the south-west United States are renowned for their observations of the solar horizon which are used to identify times of ceremony through the year. Interestingly studies at the village of Walpi have shown that the rising and setting positions at the solstices are important

because they mark the four sacred directions in the Hopi world-view, but they are not particular to ceremony. The positions on the horizon where the sun rises and sets at the solstices as viewed from Walpi are visited by the Hopi at certain times of the year where offerings are made to the sun.³⁷ It is possible to consider this as an awareness of a sense of place in a sacred landscape where natural landmarks may have been symbolically important.

There are other potential factors we might consider, for instance observable features, such as the effect which is commonly known as the “Moon illusion”, where an astronomical body appears to be larger at the horizon than whilst at some distance from it. This is a topic which we know has been the subject of speculation since at least Aristotle’s time. The Moon travels at a varying speed through its orbit and at the same time its disc appears to change in apparent size becoming most noticeable when the Full Moon occurs at one of the extremes. At minimum size the Moon is about three-quarters the area of maximum. These effects are due to the Moon being sometimes near the Earth, called perigee and sometimes at its farthest point which is called apogee. These are lunar rhythms that assiduous observers would certainly notice. It is also a fact that whilst at the horizon the shape of the Sun or the Moon may also visually change due to atmospheric refraction. When at a point of rising or setting, the light from the upper limb is refracted slightly less than the light from the lower limb and this can make their disc’s look noticeably oblate. We can never know how any of these manifestations may have been interpreted.

The effect we know as the “precession of the equinoxes”, a phenomenon noted by Hipparchus in the second century B.C., is caused by the pull of the Sun and more powerfully the Moon on the Earth’s equatorial bulge. It takes around 26,000 years to complete a circuit and makes any understanding of stellar alignments at the circles extremely difficult because as viewed from Earth, apparent star positions have changed since the circles were built. The work of Schaefer³⁸ indicates that variance in atmospheric conditions will also appreciably alter the rising and setting positions of stars from day to day, making alignments with stones on specific stars susceptible to significant imprecision. Since we have no exact dates for the construction of the circles one must steer with extreme caution when trying to fit stellar activity and should remember that the fifteen brightest stars can cover around a third of the horizon over a period of half a millennium. Prof. Morrow found an alignment from his centre at Castlerigg which he believed was associated with Arcturus around 1400 B.C., but we know that the circle was constructed at a much earlier date than this.

Conclusions

Some of the effects of light and shadow which might be considered significant at these circles have previously been examined and the notion that their astronomical symbolism may have played an important part of any observation cannot be discounted. One thing that is true is that the effects discussed are transient, occurring directly after sunrise and prior to sunset, but we cannot dismiss the possibility that some symbolism might be attached to orientations and effects which are not confined to the horizon.

It seems there has been an illogically wide acceptance that people of Northern

Europe and the Atlantic seaboard were not capable of cultural and technological advancement or innovation, but the stone circles are earlier than the civilised societies of the Mediterranean and the Near East and do offer support for the theory of independent development amongst indigenous British society. The evidence from the circles seems to agree with the earlier argument of Anderson that Neolithic and Early Bronze Age peoples in Cumbria had observed specific solar dates which are similar to those of the Iron Age Celtic calendar but this does not address the motions of the Moon with its more extensive cycles and, as pointed out at Castlerigg, these do require greater investigation.

Finally, it is essential that care should be taken not to assume knowledge of the issues that were of the greatest concern to the builders of the circles, as the example of the “Druidic Age” above has shown, so the observations of these alignments are presented purely as that and along with the additional information their interpretation is entirely the reader’s prerogative.

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