# The STONEHENGE Altar Stone

## Its Origins, Composition, and Function, And the Search for Its Lost Companion

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# The Stonehenge Altar Stone: Its Origins, Composition, and Function, And the Search for Its Lost Companion.

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Abstract: The most enigmatic "foreign" stone at Stonehenge is its Altar Stone. Long thought to have been sourced from the Old Red Sandstone beds of South Wales, new studies have focused on its origin in the Orcadian Basin of northeastern Scotland, either in the Caithness region or in the Orkney Isles. Despite one paper (Bevins et al, 2024) providing compelling evidence that the Altar Stone does not exactly match the composition of Old Red Sandstone beds on the Orkney Mainland, those responsible for transporting the stone to Stonehenge were almost certainly its original builders, the Grooved Ware culture, who first emerged on Orkney during the Late Neolithic. We look at everything known about the Altar Stone and how its presence at Stonehenge might relate to its construction. We also go in search of its lost companion, and examine where both these huge monoliths might have stood within the monument, and how all this might relate to the monument's underlying geometry.

Key words: Stonehenge, Neolithic, Grooved Ware, Old Red Sandstone, limestone, the Orkney Isles, Mesolithic, Blick Mead, Durrington Walls, Bush Barrow Lozenge, megalithic yard.

By far the most intriguing megalith featured in the construction of Stonehenge is its Altar Stone. This is a huge, rectilinear slab of grey-green micaceous sandstone fractured into two pieces. Situated in a recumbent position within the western interior of the monument's Bluestone Horseshoe it lies hidden beneath a fallen upright and lintel (Stones 55b & 156, respectively). These belong to the southwesternmost trilithon of the monument's Sarsen Horseshoe, which was composed originally of five such trilithons (see figs. 1 & 2). The trilithon's collapse had occurred prior to the arrival at Stonehenge in 1620 of the great architect, designer and draughtsman Inigo Jones (1575-1652), the first person to record the existence of the Altar Stone.[1] His conviction that it functioned as a Roman style "Altar" fostered the idea that this huge slab has always been recumbent, whereas the likelihood is it had once stood upright somewhere close to where it can be seen today. (See fig. 3 for Jones plan of Stonehenge showing the "Altar" and also fig. 4 for Jones' artistic impression of Stonehenge.)

In size, the Altar Stone is 4.88 metres (16 feet) long, 1 metre (3.5 feet) in width, and 0.5 metres (20 inches) in thickness. It weighs around 6.35 tonnes (6 ¼ imperial tons) and is the largest of the "bluestones," or "foreign stones," present at the site. Both terms refer to megaliths employed in the construction of Stonehenge that are different in appearance and composition to the hard sandstone "sarsens" sourced locally and used to create the monument's iconic Sarsen Circle and Sarsen Horseshoe. Stonehenge's bluestones are mainly spotted dolerite and rhyolite sourced from exposed outcrops in the Preseli Hills of West Wales.

In Stonehenge's standard numbering system the Altar Stone (alternately Altar Stone 1 or AS1) is Stone 80.† Its orientation, as defined by its longest sides, is 81 degrees askew of the monument's main northeast-southwest axis, which targets sunrise at the time of the summer solstice and, in the equal and opposite direction, sunset at the time of the winter solstice. A line 81-degree askew of the monument's primary axis would have targeted sunrise at the time

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† The numbering system of individual stones is that established by W.M. Flinders Petrie (see Petrie, 1880).

of the winter solstice towards the southeast and, in the opposite direction, sunset at the time of the summer solstice (see fig. 5). It thus seems certain that the Altar Stone was deliberately positioned to conform to the site's principal solstitial axis.

*Figure 1. A photograph of the existing Altar Stone at Stonehenge as revealed during excavations by R.J.C. Atkinson in the 1950s. Public domain.*

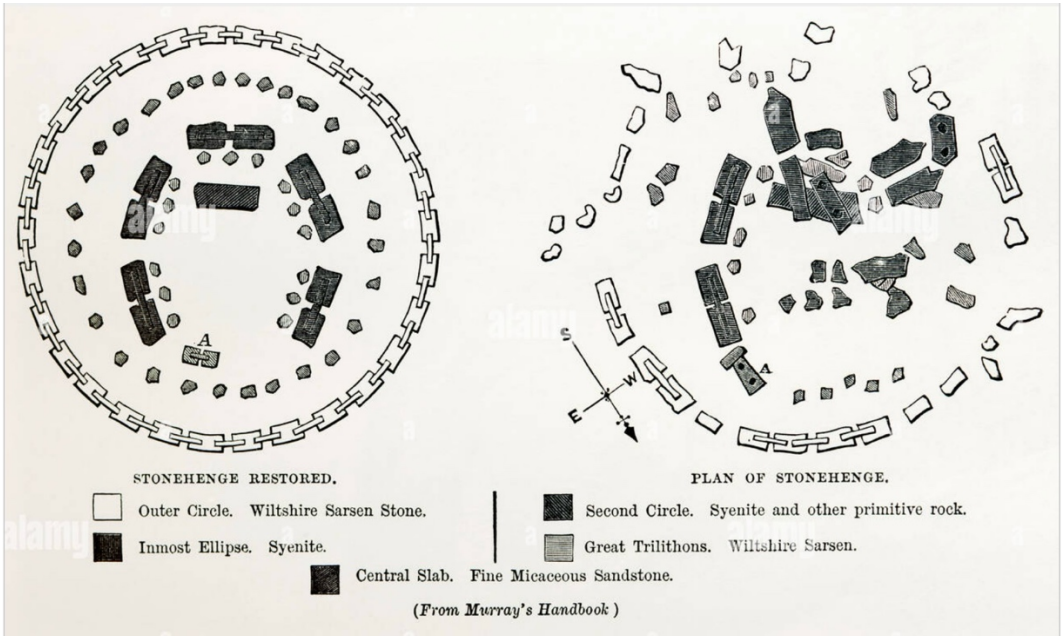


*Figure 2. Left, overhead plan of Stonehenge restored and, right, as it appeared in the early nineteenth century showing the position of the Altar Stone beneath Stones 55b and 156. Taken from* Handbook for Travellers in Wiltshire, Dorsetshire and Somersetshire, *London, John Murray [1825] 1882. Public domain.*

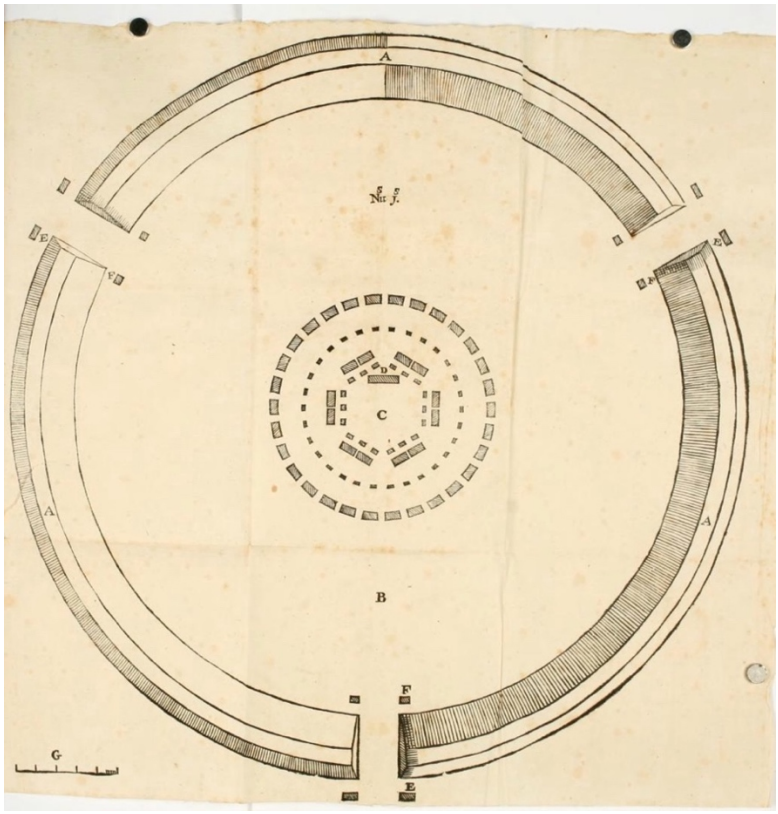


*Figure 3. Inigo Jones' rather imaginative plan of Stonehenge showing the idealised position of the Altar Stone (marked with the letter D) in its role as a Roman style altar. Public domain.*

Origins of the Altar Stone

The Altar Stone's geographical point of origin has long been debated. For generations it was thought to have come from the Old Red Sandstone beds forming part of the Cosheston Formation in South Wales, which typically outcrops at Mill Bay, in Milford Haven, Pembrokeshire. They belong to the Devonian age of geological history, meaning that they were laid down around 419-359 million years ago. Due to the Altar Stone's assumed connection to Milford Haven it was long considered possible that Stonehenge's bluestones had begun their long journey by sea and waterway somewhere along this coastline.[2]

An alternative theory as to the origin of the Altar Stone was that it came from the Lower Old Red Sandstone Beds of the Senni Formation, also of Devonian age, which outcrops across central South Wales. Mineralogist Rob Ixer of the Department of Geology at the University of Leicester and Peter Turner of the School of Earth Sciences at the University of Birmingham undertook a study of a single fragment known to have come from the Altar Stone. They determined that it did indeed match the geological signature of the Old Red Sandstone beds forming part of the Senni Formation. This led them to propose that the stone probably came from one of its exposed outcrops in the Brecon Beacons of East Wales.[3]

Everything changed in October 2023 when a new analysis of small fragments from the Altar Stone was published in the *Journal of Archaeological Science*. The team involved in this study, headed by Richard E. Bevins of the Department of Geography and Earth Sciences, Aberystwyth University, Wales, determined that the Altar Stone's petrology, that is its chemical and mineralogical composition, better matched the Old Red Sandstone beds found at three locations in northern Britain. These were to be found in the northern part of the Midlands, in the northeastern part of the Scottish mainland, and in the Orkney Isles, off the north coast of Scotland.[4]

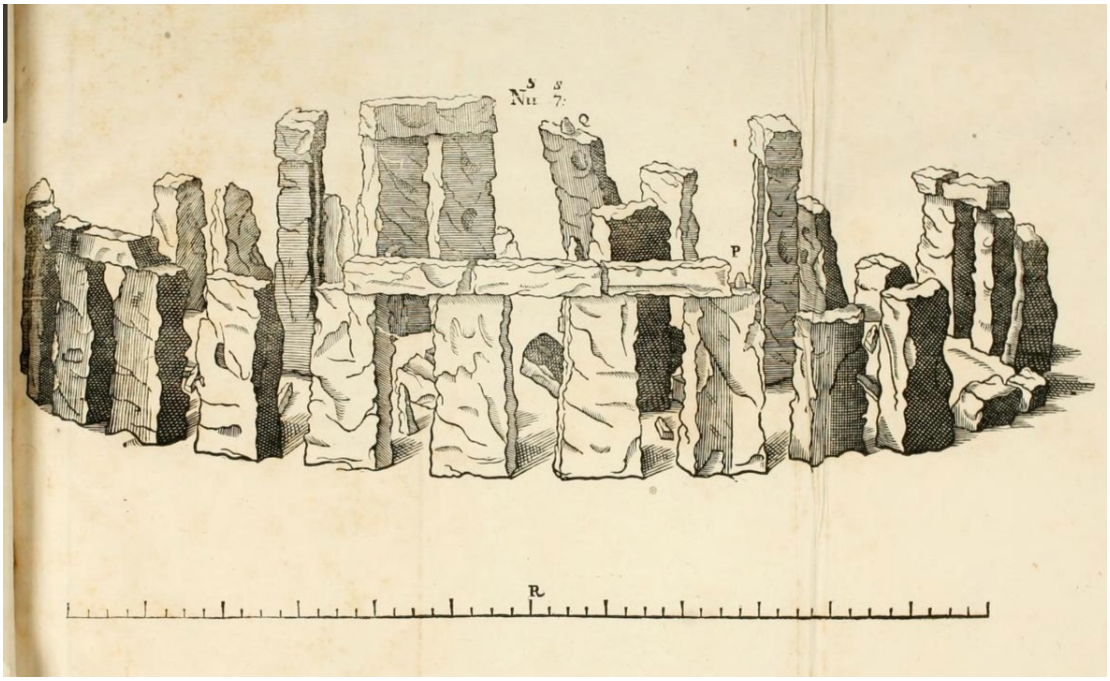

*Figure 4. Inigo Jones' impression of the ruins of Stonehenge. Public domain.*

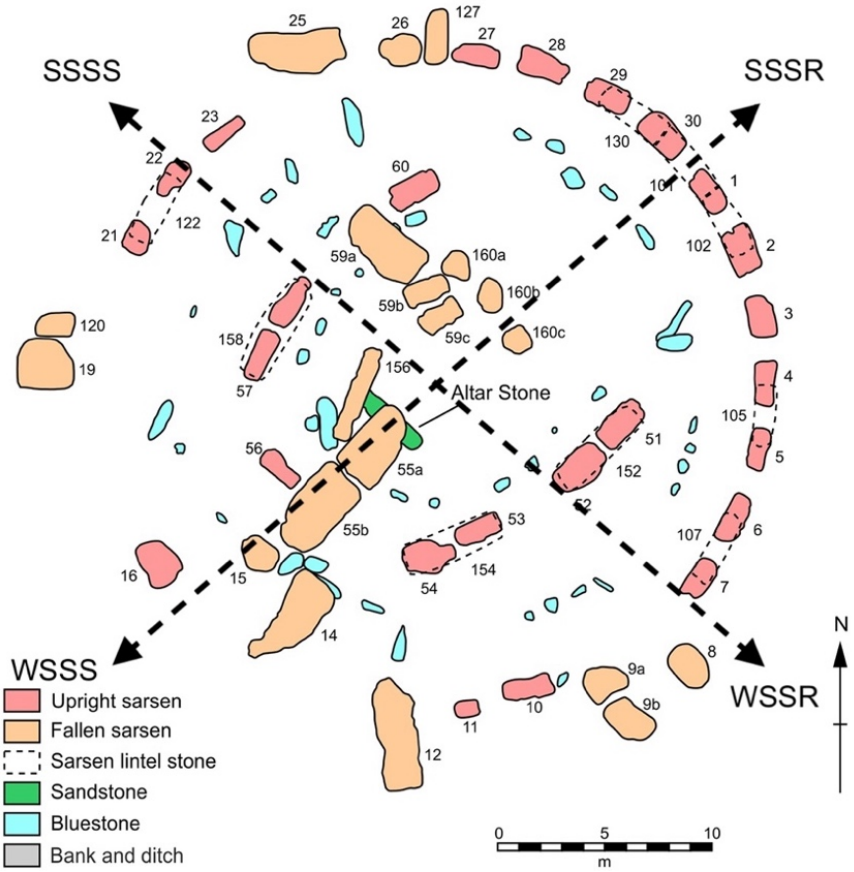


*Figure 5. Plan of Stonehenge showing its primary axis towards sunrise on the summer solstice and sunset at the time of the winter solstice, along with the orientation at 81 degrees askew of its main solstitial axis of the Altar Stone. This targets sunset on the summer solstice and sunrise on the winter solstice sunrise. Licensed by Creative Commons Attribution 4.0 International/Nash et al 2021.*

A separate study headed by Anthony Clarke of the School of Earth and Planetary Sciences, Curtin University, Perth, Western Australia, and published in August 2024, found that the most likely source of the Altar Stone was the Orcadian Basin. This stretches from the Caithness region of the Scottish mainland northwards into the Orkney Isles and beyond into the Shetland Isles (see fig. 6).[5] The Orcadian Basin was formed by the sedimentary deposits of an ancient lake that thrived during the Devonian period.

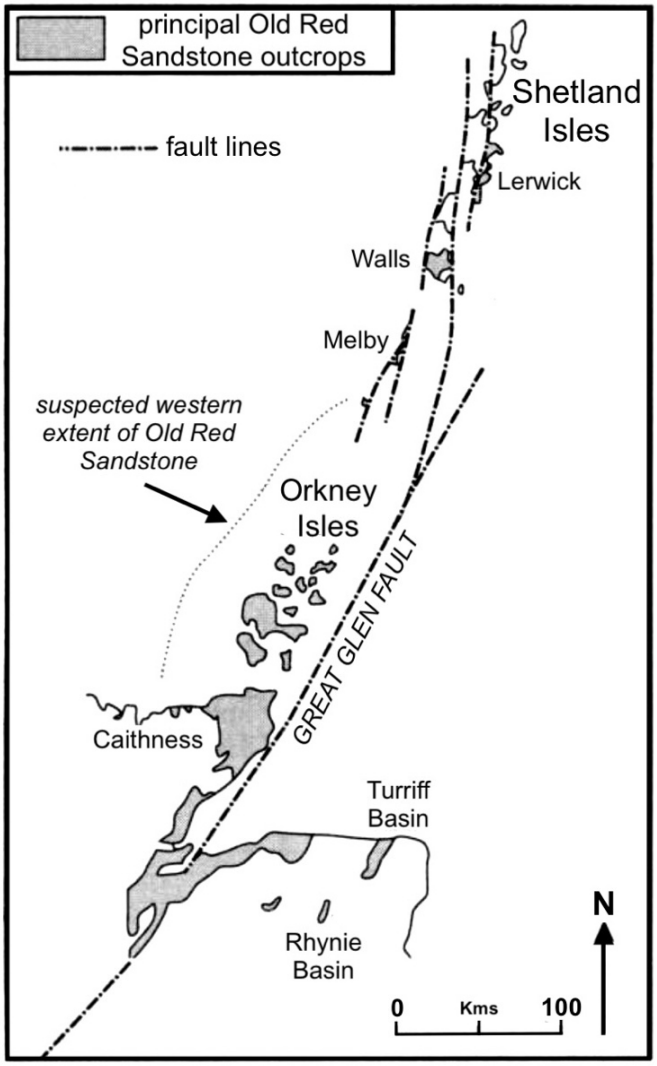


*Figure 6. Map showing the extent of the Orcadian Basin in northeastern Scotland. Credit: Andrew Collins.*

In response to Clarke et al's paper a follow up study, once again headed by Richard E. Bevins, determined that the Altar Stone's composition *did not* match the known signatures of standing stones featured in two stone circles on the Orkney Mainland.[6] Five orthostats from the Stones of Stenness along with seven megaliths from the nearby Ring of Brodgar were examined to reach this conclusion.

Bevins and his colleagues additionally determined that the Old Red Sandstone beds in nearby Stromness, from which many of the slabs came from to create these stone circles, also did not match the petrology of the Stonehenge Altar Stone.

Mesolithic Origins?

These findings were a setback to those wishing to try and find the place of origin of the Altar Stone for there seems little question that those responsible for the creation of Stonehenge's earliest phases were the Grooved Ware culture, whose original homeland was the Orkney Mainland (see fig. 7 for a breakdown of dates for the Grooved Ware culture and the key phases of construction at Stonehenge.)

Despite being unable to find an exact match to the Altar Stone's composition on the Orkney Mainland, a connection with the region still seems likely. In the knowledge that it firmly matches the petrology of the Old Red Sandstone beds of the Orcadian Basin the stone slab perhaps originated either in the Caithness region, or it came from a geological source that has today been lost beneath rising sea levels.

Underwater features that have been interpreted as a stone circle and an enormous henge monument have been detected off the coast of the Orkney Mainland. Caroline Wickham-Jones (1955-2022), an archaeologist and expert on the Orkney Isle's Mesolithic and Neolithic history—who spearheaded the search for these lost monuments—was of the opinion that the Ring of Brodgar, which dates to circa 2500-2400 BE, was built to replace the submerged henge monument.[7] If this is correct then the original henge must have dated to the Early to Middle Neolithic, circa 4000-3000 BCE. Wickham-Jones even considered that it might have been Mesolithic in origin.[8]

In the knowledge that rising sea levels would have eroded existing cliff faces whilst at the same time claiming more and more coastal lands, it is possible that the geological beds from which the Altar Stone came from lie somewhere off the coast of the Orkney Mainland. Whatever the answer, the search to find the stone's place of origin will no doubt continue for many years to come.

| Age | Dates | Blick Mead | Stonehenge* | Culture |
|---|---|---|---|---|
| Mesolithic | 9600-4000 BCE | Ca. 8000-4000 BCE | Post holes/pits 8820-6590 BCE | |
| Early Neolithic<br><br>Middle Neolithic<br>Late Neolithic | 4000-3400 BCE<br><br>3400-3000 BCE<br>3000-2500 BCE | | Great & Lesser Cursus, before 3400 BCE.<br>Phase I, 3000-2935 BCE<br>Phase II, 2640-2480 BCE | Grooved Ware<br>- in Orkney Isles, 3200-3000 BCE<br>- in Britain & Ireland 3000-2500 BCE |
| Early Bronze Age | 2500-1600 BCE | | Phase III, 2470-2280 BCE<br>Phase IV, 2280-1520 BCE | Beaker People, 2500-1700 BCE |

*Stonehenge dates courtesy of Britannia.com

*Figure 7. Breakdown of dates for the Grooved Ware culture and the key phases of construction at Stonehenge. Credit: Andrew Collins.*

Phases of Stonehenge

When exactly the Altar Stone might have reached Salisbury Plain in southern Britain is unclear. It could have been at a very early date indeed, arguably even before the construction of Stonehenge Phase I, circa 3000-2900 BCE. This involved the digging of a circular henge approximately 110 metres (360 feet) in diameter made up of an outer bank inside which was a ditch with three entranceways, two in the south and one in the northeast. It enclosed 56 pits dug in a circle and known today as the Aubrey Holes. The name comes from the seventeenth-century antiquary, biographer and writer John Aubrey who was the first to describe them. The holes may have contained wooden posts, bluestone pillars, or, alternately, they could have been dug purely for ritual purposes. What we do know is that they were only exposed for a very short period of time, before being filled in again.

At the same distance out from the centre of Stonehenge as the Aubrey Holes four sarsen stones, known as the Station Stones, were afterwards installed, either towards the end of construction Phase I or at the commencement of construction Phase II, circa 2640-2480 BCE. (We know this feature came after the Aubrey Holes since the stonehole for one of the stones, Stone 94, cuts right across a pre-existing Aubrey Hole.) The positioning of these stones formed a rectangle with a northwest-southeast orientation. Known as the Station Stone Rectangle, its longest sides were aligned to target the most northerly setting and, in the equal and opposite

direction, the most southerly rising of the moon as determined by the extremes of its 18.61-year standstill cycle (see fig. 8).

Perpendicular to these lunar alignments the Station Stone Rectangle targeted the sun's rising at the time of the summer solstice and its setting at the time of the winter solstice. It was this bi-directional solar alignment that would come to define Stonehenge's primary axis acknowledged and adhered to by various cultures of the Neolithic and Early Bronze Age across a period of almost 1500 years.

A Recumbent Stone

Today the Altar Stone is recumbent, although if in the past it *had* stood erect then how did it come to be laid flat? Simon Banton, a researcher of the history and evolution of Stonehenge, points out that during Stonehenge Phase III, circa 2470-2280 BCE, the erection of a ring of 60 bluestones between the Sarsen Circle and Sarsen Horseshoe would have effectively blocked out the view of the winter solstice sunrise and summer solstice sunset.[9] Since this bi-directional solar alignment reflects the orientation of the Altar Stone it could have been laid flat after this time to preserve the presence of the alignment. What is more, since the Altar Stone targets sunrise on the winter solstice and sunset on the summer solstice Banton suggests that when standing the monolith was turned so that its thin narrow edges honoured these alignments. What all this tells us is that the Altar Stone would appear to have retained its function as a solstitial marker even after it was laid flat, something that probably occurred during the Early Bronze Age, circa 2500-1500 BCE.

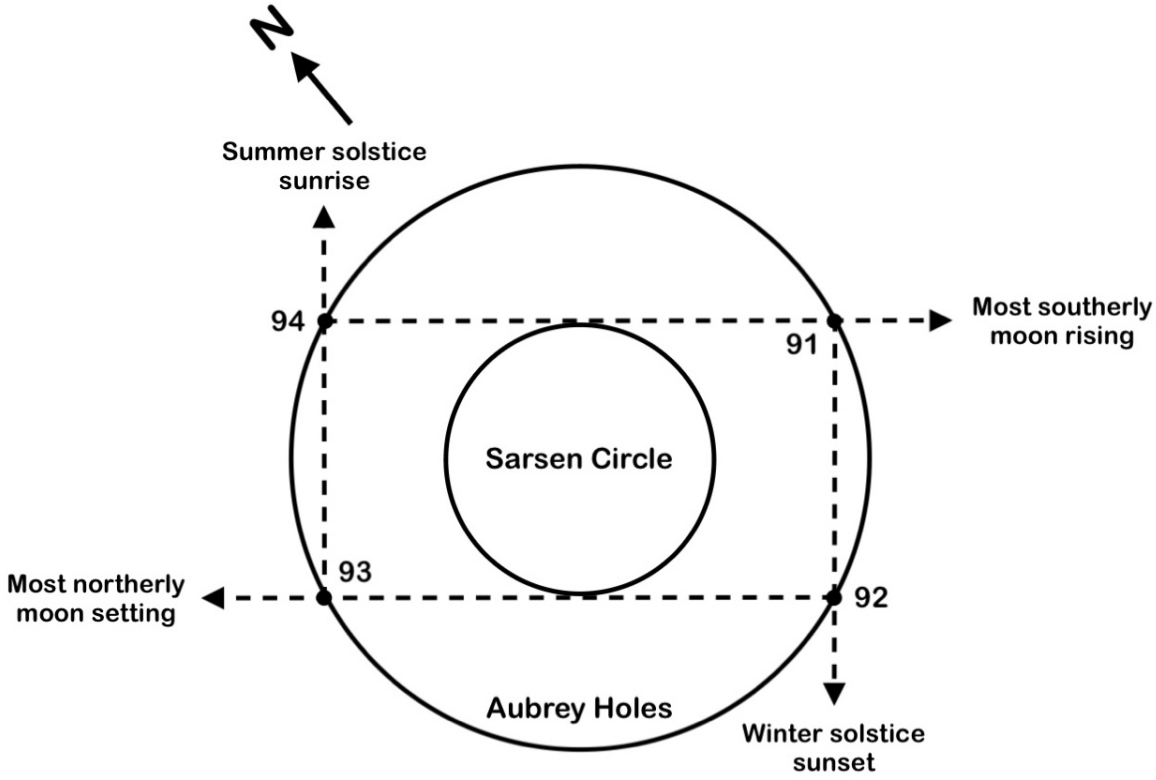


*Figure 8. The interior of Stonehenge showing its Station Stone Rectangle (Stones 91, 92, 93 & 94) and the manner its directionality reflects the site's primary solstitial axis as well as the most northerly moon setting and the most southerly moon rising across the lunar orb's 18.61-year standstill cycle. Credit: Andrew Collins.*

Grooved Ware Origins

As previously noted, those behind the Altar Stone's movement to Stonehenge were almost certainly its original builders. These, almost certainly, were the Grooved Ware People, their name coming from the culture's manufacture of flat-bottomed ceramic vessels incised with lozenges, chevrons, zigzags, concentric rings and, very occasionally, spirals (see fig. 9). Some of these designs match similar patterns found within Neolithic passage graves in Ireland's Boyne Valley, which date to as early as 3200 BCE, as well as portable objects known to be associated with the Grooved Ware culture. They include hand-held stone balls (petrospheres), found almost exclusively in Scotland, as well as "drums" like the three chalk examples found in a round barrow near Folkton, North Yorkshire, in 1889.

The Grooved Ware People first emerged in the Orkney Isles across a period of around 200 years during the Middle Neolithic, circa 3200-3000 BCE. Thereafter they expanded their activity into mainland Britain and Ireland, influencing the development of a large number of ceremonial and ritual sites throughout the British Isles.

Examples of Grooved Ware have been found at the very base of the henge's ditch dug during construction Phase I at Stonehenge. These were uncovered during excavations undertaken by British archaeologist Lieutenant-Colonel William Hawley between the years 1919 and 1926. The potsherds were formally identified as examples of Grooved Ware by noted British archaeologist and prehistorian Stuart Piggott, who was the first to describe this ceramic ware tradition.[10] Grooved Ware has been found also at the Neolithic encampment of Durrington Walls and at nearby Woodhenge, both located within the Stonehenge landscape, demonstrating that they too were almost certainly the product of this same culture.

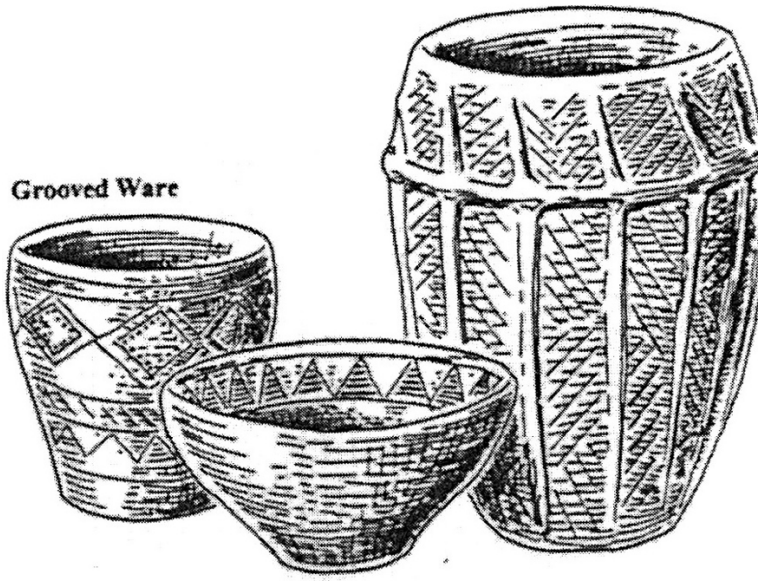


*Figure 9. Examples of Grooved Ware ceramics. Public domain.*

In addition to this, excavations carried out between 2004-2024 at an archaeological site on the Ness of Brodgar on the Orkney Mainland produced an incense cup matching almost

exactly four examples previously found at Durrington Walls. So similar are they that they could have been made in the same workshop.[11]

Why the Grooved Ware People might have decided to transport a huge slab of stone, weighing over 6 tonnes, arguably from its place of origin in northeastern Scotland to southern Britain is important to try and understand. It seems unlikely that it was quarried for immediate transportation to a place of erection over 500 miles away. In the knowledge that the Stonehenge bluestones were transported all the way from the Preseli Hills of West Wales—where at least some of them might well have formed part of a stone circle at a site named Waun Mawn[12]—tends to suggest that the Altar Stone was important even before its transportation. In other words, it could well have featured as part of an existing monumental structure, arguably one close to its geological source.

## Mesolithic Landscape

If so, then why was the Altar Stone important enough to be carried all the way from Scotland to a new location 500 miles away on Salisbury Plain? Answering this question requires us to first examine the emergence of the Stonehenge landscape as a place of special interest to the post-ice age Mesolithic peoples of southern Britain.

By the beginning of the eighth millennium BCE the central focus of the area would appear to have been a spring-fed, shallow lake located on the River Avon some 2 kilometres (1.25 miles) east-southeast of Stonehenge. Excavated since 2005 by a team of archaeologists from the University of Buckingham led by David Jacques, the site, known by the local name Blick Mead, has produced as many as 35,000 worked flints and 2500 animal bones, some displaying evidence of being cooked. Radiocarbon testing of organic materials found at the site indicates that occupation began around 8000 BCE and continued through until around 4000 BCE [13].

Towering above Blick Mead on its western side is Vespasians Camp, a striking north-south-oriented hill partly encircled by the River Avon and crowned by the remains of an Iron Age hillfort (see fig. 10). This surely would have played a major role during the Mesolithic and later Neolithic age. (Its summit was severely landscaped during the eighteenth century destroying any reasonable chance of obtaining meaningful archaeology from the location.)

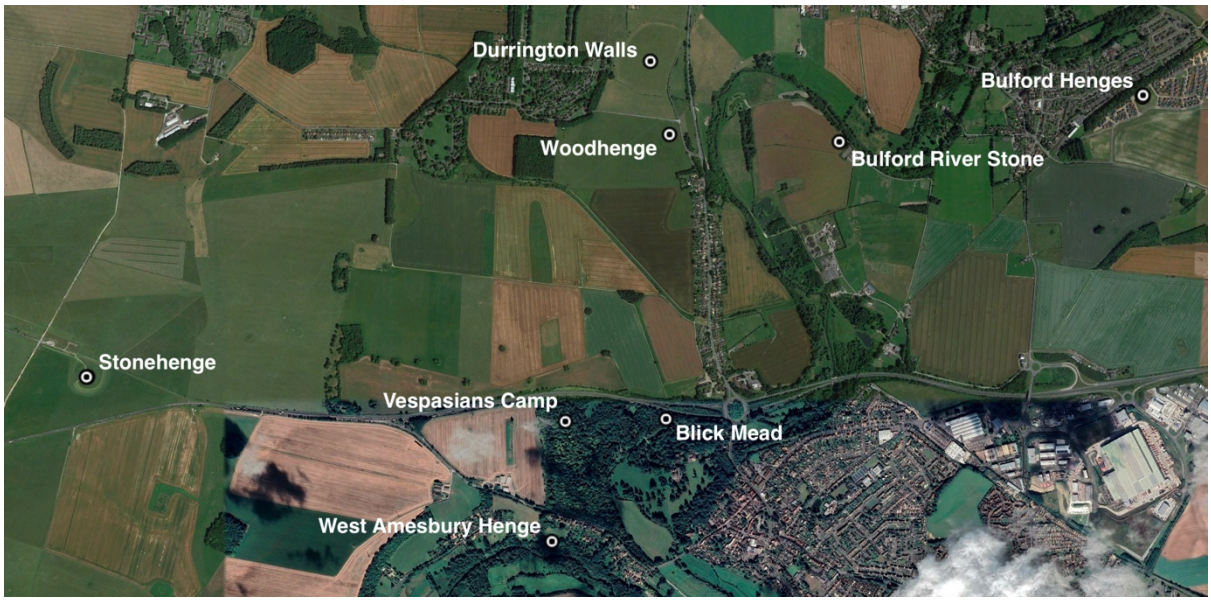

*Figure 10. Map of the Stonehenge landscape showing key sites mentioned in the text. Credit: Google Earth/Andrew Collins.*

In addition to this, in 1967, three huge pits, 1.37 to 1.52 metres (4.5 to 5 feet) in diameter, were uncovered some 100-200 metres (110-120 yards) northwest of the site of Stonehenge, with a fourth example being found in 1988 100 metres east of the other three. Pine charcoal removed from three of the pits provided radiocarbon dates that ranged between 8820-6500 BCE.[14] The purpose of these pits is unclear, although one persisting theory is that they supported enormous posts as much as 9 metres (30 feet) high.

Confirming Stonehenge's own importance during the Mesolithic age was the discovery by Timothy Darvill, the former Professor of Archaeology in the School of Applied Sciences at Bournemouth University, and Geoffrey Wainwright, the former Chief Archaeologist at English Heritage, of pine charcoal radiocarbon dated to 7330-7070 BCE.[15] It was found during excavations in 2008 at the southern edge of a large mound, oval in plan, that underlies at least one fallen stone. The mound was constructed, seemingly, in two phases, first as an earthen platform and then with an added rise at its centre. It is made from chalk and soil and is located both within and beyond the southeastern part of the monument's Trilithon Horseshoe.[16] Although there is some debate over whether this feature is natural or artificial, there are clear indications that it predates the construction of the stone features, meaning that it could have been an early or even an original component of the monument.[17] The finding of pine charcoal at its southern edge dating from the late eighth millennium BCE makes it a tantalising possibility that the mound belongs to this early stage of activity at the site.

One other feature that would have been an important influence on the Mesolithic visitors to the future site of Stonehenge is a series of periglacial grooves or stripes, caused through intense glacial action during the last ice age.[18] They take the form of deep linear striations running parallel to each other within the chalk land surface northeast of the monument. The orientation of these grooves matches that of the final stretch of the landscape feature known as the Avenue. This is a prehistoric trackway, originally bordered by parallel banks 34 metres (112 feet) apart with a ditch on either side. It was constructed in three segments and linked Stonehenge with the nearby River Avon some 1.6 kilometres (1 mile) away.

The section of the Avenue nearest the monument has long been known to align with the site's main solstitial axis. This means that the periglacial stripes are themselves aligned to the midsummer solstice sunrise and midwinter solstice sunset, a fact that could well have determined why the location became established as a site of special interest in the first place. The full extent of the grooves remains unclear. They certainly span a distance of at least 150 metres (165 yards) and are framed on either side by parallel ridges. Although covered by soil and grass today, in the past these ice-age runnels would have been more visible, their presence perhaps highlighted by contrasting vegetation.

With only about 40-65 percent woodland cover during the Mesolithic age and localised natural clearances in the area of Stonehenge such landscape features would, in the words of Mike Parker Pearson of the University College of London's Institute of Archaeology and currently director of the Stonehenge Riverside Project, and his colleagues, have given "cosmogonic significance to the location."[19] In their opinion, "A long-term history of gatherings at the Stonehenge locale throughout the Mesolithic would have created a network of well-worn paths and routeways all leading towards it. In the same way that all roads led to

Rome, all paths in the earlier Holocene[‡] of central southern England might have led to Stonehenge, or rather to the nearby springheads and valley sides of the Avon."[20]

All this was beginning to take place in the Stonehenge landscape by the late ninth, early eighth millennium BCE, at the same time that interest in the Blick Mead site was on the rise. Thereafter feasting and ceremonial activity continued to centre around the lakeside site, and presumably Vespasians Camp, through until the end of the fifth millennium BCE when the area's earliest Neolithic settlers began switching their attentions to the future site of Stonehenge.

The arrival at Stonehenge of the Altar Stone might well have been seen as a valuable addition to a slowly evolving monument that was already considered an *axis mundi,* a perceived centre point of the known world. It is, possible, however that before being moved to Stonehenge the stone had stood elsewhere in the local landscape. I say this as between Vespasians Camp and the nearby River Avon, close to the beginning of the Avenue, a series of stoneholes encircled by an earthen henge were uncovered in 2008 and 2009 by the Stonehenge Riverside Project. Chips of bluestone found at the base of some of these holes indicate they might once have held megaliths of this type.[21]

The monument, known today as Bluestonehenge, Bluehenge, or the West Amesbury Henge, has been dated to 3000-2400 BCE. It is possible that its bluestones were uprooted and afterwards transported to nearby Stonehenge.[22] If so, then it tells us that exotic stones were being brought to the area from elsewhere in Britain and then used to create megalithic monuments before their final transportation to Stonehenge. The same might well have been the case with the Altar Stone (and its companion as we see shortly), which could therefore have reached Salisbury Plain even before the construction of Stonehenge Phase I.

## Anthropomorphic Qualities

If the Altar Stone had indeed been erected elsewhere before being transported to Stonehenge then it is likely that it was considered to have some inherent supernatural power. In southeastern Turkey as far back at the Pre-Pottery Neolithic age standing stones were endowed with very clear anthropomorphic qualities. At 11,000-year-old Taş Tepeler sites such as Göbekli Tepe and Karahan Tepe enormous T-pillars ranging in height from 1.5 metres (5 feet) to 5.5 metres (18 feet) display clear human-like features (see fig.11). They can have arms, hands, neckties, parallel lines signifying the hems of hanging garments, and in some cases even belts and belt buckles. What is more, their T-shaped terminations acted as abstract human heads, all indicating that these pillars were considered to embody an individual consciousness, one perhaps identified with a divine ancestor or celestial being.

In the fourth and third millennia BCE anthropomorphised standing stones and carved stelae started appearing everywhere from Siberia and Mongolia in the east to southwestern Europe in the west (see fig. 12). In similar with much earlier Taş Tepeler sites such stones were probably seen to embody an active spirit. Leaving behind such an important stone when moving to a new location would probably have been seen as unthinkable. It needed to be taken with you in the same manner shamans are known to carry with them important spirit stones when migrating to a new location. This is recorded, for instance, in connection with the Buryat peoples of Central and Northern Asia, for we read that:

> When Russian and Soviet government decrees moved some Buryat families away from ancestral territories, the families carried stones from their holy places with them, setting

[‡] The Holocene refers to the current geological age, which began in 9600 BCE.

> the stones under the altars they constructed in their new home regions. Ancestors' spirits were believed to congregate at the mountain peaks, cliffs, or springs in the ancestral lands, and to come to the new homes when called at the altars.[23]

Colin Richards of the University of Manchester has written that the Craig Rhos-y-felin quarries from which some of the bluestones at Stonehenge were sourced probably possessed a "special significance for prehistoric people."[24] Mike Parker Pearson and his colleagues say that for the people of the Late Neolithic, the removal of the bluestones from West Wales to Salisbury Plain "probably related to their significance as symbols of identity," an identity that was, "ancestral, with stones representing the deceased ancestors, because the earliest contexts in which bluestones were placed … were monuments with ancestral and funerary associations."[25]

*Figure 11. Reproductions in the* Şanlıurfa *Archaeological Museum of the two central pillars within Göbekli Tepe's Enclosure D. Note their anthropomorphic nature suggesting they represent divine ancestors or celestial beings. Credit: Andrew Collins.*

*Figure 12. Anthropomorphised stone slab identified as a grave marker found in the Hakkari region of southeastern Turkey. Its unhewn nature argues for it having once stood upright. Credit: Andrew Collins/Van Archaeological Museum.*

In this manner the transportation of bluestones from West Wales to Salisbury Plain carried with it some perceived link with the ancestors of the Neolithic peoples of the Preseli Hills whose own journey included the erection of the Waun Mawn stone circle. These individuals, as Parker Pearson and his colleagues firmly suspect, not only came from West Wales but also saw the Craig Rhos-y-felin bluestone quarry site as symbolic of some kind of supernatural power.[26] Was something similar going on in connection with the Altar Stone, which was perhaps seen to embody an active spirit even before its arrival at Stonehenge?

As I have proposed elsewhere the Mesolithic origins of the Grooved Ware People are to be sought not in Orkney, or indeed anywhere else in the British Isles, but in northern Europe,

and possibly even in Doggerland, the lost landmass that linked the British Isles to continental Europe through until its final submergence around 5500 BCE. Mesolithic technocomplexes such as the Swiderian and Kunda that thrived in countries such as Estonia, Lithuania, Latvia and farther west in Scandinavia, match very well recorded finds of flint points on Orkney.[27] It is therefore towards the Finno-Ugric or Proto-Uralic language speaking peoples of northern Europe that we should perhaps be looking for clues regarding the Altar Stone's origin and purpose, a matter touched upon again at the end of this study. Right now, however, we need to address another equally intriguing mystery—the existence and final fate of Altar Stone 1's alleged companion, Altar Stone 2.

## A Second Altar Stone?

Rumours surrounding a second Altar Stone at Stonehenge have persisted since the seventeenth century.[28][§] Most crucially, in an unpublished manuscript Wiltshire antiquarian John Aubrey (1626-1697) wrote that Philip Herbert, 4th Earl of Pembroke, told him that "an Altar-stone was found in the middle of the Area here," in other words the monument's inner sanctum, that was afterwards "carried away to St James's [Westminster]."[29][**] (Original parenthesis.)

Aubrey noted that the Earl of Pembroke was at the time "L[ord]. Chamberlayne to King Charles the First," (current author's parenthesis) making it clear the entry in his manuscript must have been written between 1626 and 1641 when Pembroke was indeed Lord Chamberlain to the king. During Charles I's reign St James's Palace, Westminster, was a major royal residence.

Charles I made frequent visits to the Earl of Pembroke's estate at Wilton, which is local to Stonehenge. It was, however, the king's predecessor, James I, who was responsible for catalysing the second Altar Stone debate. He famously visited Stonehenge in 1620 and was so taken by what he saw that he immediately commissioned the celebrated architect Inigo Jones to uncover more about its history and draw an accurate plan of the site. He also ordered George Villiers, 1st Duke of Buckingham, to excavate the interior of Stonehenge, something he undertook with the help of local workers in the years immediately following 1620. Unfortunately, however, no report of his excavations was ever published, due most assuredly to the fact that he was assassinated in 1628.

It was in the wake of the Duke of Buckingham's excavations, that "an Altar-stone … found in the middle" of Stonehenge was, according to Aubrey, "carried away to St James's [Westminster]." Enquires, however, to St James's Palace in 1868 by William Cunnington III, the

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[§] I wish to thank Debbie Cartwright for introducing me to the former presence at Stonehenge of a second Altar Stone. At the time (June 2024) I knew nothing about it, but a chance meeting with Maria Wheatley in London about a month later convinced me not only of its existence, but also that it might still be around. For this unexpected moment of realisation I thank her also.

[**] Nineteenth century antiquarian and pioneering archaeologist Richard Colt Hoare in his *The History of Ancient Wiltshire vol. II: The Ancient History of South Wiltshire* records that Edmund Gibson, Bishop of Lincoln, who was an antiquary and editor of *Camden's Britannia,* 1695, wrote that, "In the inmost part of the CELL [that is the centre of Stonehenge], Mr. [Inigo] Jones observed a stone (*which is now gone*) appearing not much above the surface of the earth, and lying toward the east, four feet broad, and sixteen feet long, which was his supposed altar stone."' (See Colt Hoare 1812, 139, current author's parenthesis and emphasis). The bracketed note stating that the stone has "now gone" might be seen to imply that this is a reference to the Altar Stone that Aubrey reported had been removed from Stonehenge. The fact, however, that the stone in question fits exactly the description of the existing Altar Stone, and is referred to as the one observed (and thus recorded) by Jones makes it clear that this is what is being described, not its lost companion. Why the Bishop of Lincoln should write that it is now missing remains unclear. Perhaps the fact that the stone is almost entirely hidden beneath two fallen sarsens might help explain this mystery.

grandson of a noted antiquarian and archaeologist of the same name responsible for excavating various key sites in the Stonehenge landscape, came to nothing. In a formal reply from Westminster Abbey's Clerk of the Works Cunnington was informed that, "No such stone now exists there,"[30] although whether or not one had done so in the past was never made clear.

The Berwick St James Connection

In 1933 a new hypothesis was proposed regarding the fate of Stonehenge's second Altar Stone. Two standing stones, both slab-like in appearance, were to be found in the village of Berwick St James just 5.85 kilometres (3.65 miles) southwest of Stonehenge. The Reverend George Herbert Engleheart of Dinton, Wiltshire, an avid daffodil grower and local historian, became interested in their provenance, having learned about Aubrey's claims regarding a second Altar Stone being removed from Stonehenge.

On a visit to Berwick St James in 1932 Engleheart recorded that the taller of the two stones was 6 feet (1.83 metres) in height, while the smaller one was some 5 feet (1.52 metres) tall. During his exploration of the village Engleheart spoke to the village's oldest resident, an 80-year-old shopkeeper and village subpostmaster named Thomas Kitley. He recounted how his mother, Emma Kitley (nee Wheeler), who had died in the year 1900 at the age of 82, had recalled how the two stones were used to "bridge 'two gullies'."[31]

In the knowledge that eighteenth-century antiquarian William Stukeley and others had reported how stones from Stonehenge were being either broken up or taken away to create bridges,[32] Engleheart asked whether the Berwick St James stones might in fact be two halves of Stonehenge's missing Altar Stone. Could the Earl of Pembroke's claim that the "Altar-stone" was "carried away to St James's" in fact be a confused memory of its transportation to nearby Berwick St James where its broken fragments were indeed used to "bridge gullies"?

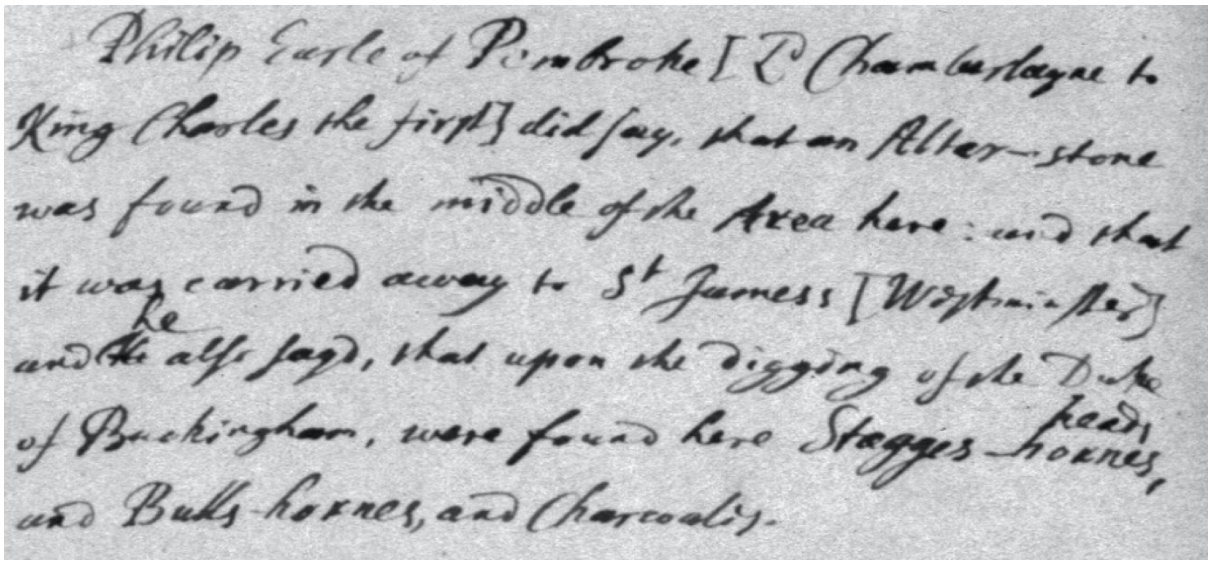
Philip Earle of Pembroke [L^d Chamberlayne to King Charles the first] did say, that an Alter-stone was found in the middle of the Area here: and that it was carried away to S^t Jamess [Westminster] and he also said, that upon the digging of the Duke of Buckingham, were found here Stagges heads, and Bulls-horns, and Charcoale.

*Figure 13. John Aubrey's unpublished manuscript* Monumenta Britannica, *written circa 1626-1641, showing the reference to an "Altar-stone" being found in "the middle of the area" at Stonehenge that was afterwards carried away to "St James [Westminster]." Note the use of parenthesis to enclose the word "Westminster," showing it had not been part of the original message conveyed to him by the 4th Earl of Pembroke. Credit: Public domain.*

Engleheart additionally offered certain points of similarity between the two stones at Berwick St James. Both were around 2.5 feet (76 centimetres) in width (the larger one is in fact around 84 centimetres (33 inches) at its widest point) and 9 inches (23 centimetres) in

thickness, indicating that they could well be fragments of the same stone. Moreover, if both fragments were buried to a depth of around 2 feet (61 centimetres) this offered a total height for the original stone in the range of 15 feet (4.6 metres), very close to that of the existing Altar Stone.[33] Even though these measurements indicate that the second Altar Stone would have been thinner and slightly narrower than its companion there is no reason to assume they would both have been the same. One could have been bigger than the other.

Enquiries at Berwick St James in August 2024 by Hugh Newman and the present author led us to local historian Nicola Street. Her family owns the farm on Langford Waie, an access road located on the west side of the High Street. It is at the junction of these roads that the stones can be found. She recounted how they were used to bridge ditches on either side of the access road before being stood upright in the manner seen today.

Nicola kindly supplied a postcard from the 1910s or 1920s showing the larger of the Berwick St James stones in place (see fig. 14). What seems clear from this photograph, and from an additional one taken by Engleheart (see fig. 15a), is that much more of the stone was exposed above ground level in the past. The same can be said for the smaller of the two stones (see fig. 15b).


*Figure 14. Postcard from the 1910s or 1920s showing Berwick St James with the larger of the two standing stones arrowed. It stands at the junction of High Street and Langford Waie, the latter a farm track. Public domain. Thanks to Nicola Street for supplying this postcard for use.*

Further Support for a Second Altar Stone

Further support for the Berwick St James stones being Stonehenge's missing Altar Stone came in 1987 from Aubrey Burl (1926-2020), a renowned British archaeologist and authority on Britain and Ireland's megalithic culture. In his 1987 book *The Stonehenge People* Burl championed the idea that the Berwick St James stones had started their life at Stonehenge as a single monolith, which in the seventeenth century was broken in two and removed to Berwick St James.[34] In his opinion, "Aubrey had been misled," stating that:

Another informant, Mrs Trotman, told him that “one large stone was taken (carried) away to make a Bridge” by “the inhabitants about the Amesburies.” It was probably this stone that Pembroke had remembered, taken not to London but to the hamlet of Berwick St James only four miles west of Stonehenge.[35]

Burl’s firm conviction that the Berwick St James stones had once formed part of the Stonehenge complex prompted Dr. Olwen Williams-Thorpe and R. S. Thorpe of the Department of Earth Sciences at the Open University, Milton Keynes, in the UK, to inspect them with the purpose identifying its composition. They determined that they were made of a peloidal packstone and even a grainstone, both forms of limestone.[36] Peloids are allochems, grains larger than 0.25 mm that are usually composed of a mineral known as micrite. The difference between packstone and grainstone is that the former contains carbonate mud that support grains while the later lacks mud but still supports grains.

*Figure 15a & 15b. On the left (15a) an old picture of the larger of the Berwick St James stones (after Engleheart 1933) and on the right (15b) what remains above ground today of the smaller of the two stones. 14a: Public domain. 14b credit: Andrew Collins.*

According to Williams-Thorpe and Thorpe, “Such rocks outcrop at many localities within southern England, and the nearest feasible source to Stonehenge is near Tisbury ca. 22 km [13.7 miles] to the south-west.” They concluded that, “This new evidence suggests the use of yet another type of rock for the Stonehenge monoliths.”[37]

Limestone outcrops at Tisbury and nearby Chilmark have been widely used as building material since medieval times. Indeed, stone removed from quarries in this area was famously employed in the construction of nearby Salisbury Cathedral.

Ancient mysteries writer and master dowser Maria Wheatley dismisses the Berwick Stones as potential candidates for the second Altar Stone because limestone, she says, was

never used at Stonehenge. Instead, she draws attention to the discovery of darker chips of micaceous sandstone found at Stonehenge that are not from the existing Altar Stone. Mineralogist Rob Ixer has matched them to Lower Palaeozoic Old Red Sandstone sourced from the Cosheston Formation, which outcrops at Mill Bay, Milford Haven, in Pembrokeshire, South Wales.[38]

It was, of course, this same location that Altar Stone 1 was assumed to have come from before Ixer itself published his analysis of a recorded fragment from the stone. This concluded that the slab-like monolith was most likely sourced from the Lower Old Red Sandstone Beds of the Senni Formation of South Wales, perhaps where it outcrops in the Brecon Beacons. As we have seen, in 2024 it was announced that a further examination of small fragments from Altar Stone 1 has indicated that it in fact came from the Orcadian Basin of northeastern Scotland.

What this could imply is that both Altar Stones were composed of slightly different types of micaceous sandstone, one darker and the other lighter, each one coming from completely different parts of mainland Britain.

Maria believes that Altar Stone 2 did indeed go to St James Palace, Westminster, following the Duke of Buckingham's excavations at Stonehenge.[39] This is certainly a possibility, although I would argue that the transportation through London of a massive stone slab nearly five metres in length and weighing over six tonnes, along with its subsequent erection at Westminster Palace, would surely have been recorded by some local notary. Since nothing like this has been preserved the Berwick St James stones should not be discounted as candidates for Altar Stone 2, especially in the firm knowledge that large stones *are* known to have been carted away from Stonehenge to be used as bridges.

## The Bulford River Stone

What is more the Berwick St James stones are not the only limestone megaliths in the vicinity of Stonehenge. At Bulford, just 4 kilometres (2.75 miles) northeast of Stonehenge, there is a huge stone that was once to be found actually in the River Avon. It is the subject of considerable local folklore including the fact that it was apparently destined for Stonehenge. The story goes that as the devil, under the command of the wizard Merlin, was transporting the boulder through the air from Ireland to Salisbury Plain, the "withy," or basketry in which it was being carried, broke causing the stone to fall into the water.[40]

Although such legends are not necessarily to be seen as any older than medieval times, they show that the Bulford megalith was looked upon both with reverence and with superstition, especially in the knowledge that local people believed that anyone trying to remove it from the river would be cursed.[41]

The composition of the Bulford stone has long been known to be different to that of the sarsens and bluestones of Stonehenge. James Norris (1785-1842) of Sedgehill, Wiltshire, for instance, in a letter to his friend William Withering dated to February 9 1798, wrote that the stone, blunted at one end and with an iron ring affixed to it for mooring boats, was composed of oolitic limestone, which he assumed was from the Chilmark quarries.[42]

Bulford itself was the setting for two Late Neolithic penannular henge monuments located side by side, which during the Bronze Age were encircled by ring ditches.[43] Their presence could indicate that the village's limestone boulder was the result of either Late Neolithic or Early Bronze Age activity in the area. Worth noting also is the fact that before even the construction of Bulford's two henge monuments an earlier structure existed on the site. Dating to circa 3000 BCE, it featured a series of pits that were found to contain examples of Grooved Ware as well as various portable objects known to be associated with its material culture.[44]

## Limestone at Stonehenge

More significant perhaps in our hunt to find Stonehenge's second Altar Stone is knowledge that blocks of limestone were used as packing stones for at least two, and possibly even three or more, of the sarsen uprights at Stonehenge ("Stones 1 and 30, probably Stone 6 and others").[45]

The existence of these packing stones confirms that limestone was indeed used at Stonehenge, certainly during construction Phase II. It is even possible that these blocks were on site during construction Phase I. As we shall see, these packing stones take on a far greater significance when we come to examine where exactly Altar Stone 2 might have stood within the Stonehenge monument.

No one can know for sure whether or not the Berwick St James stones *are* the remains of the missing Altar Stone. Their association with Stonehenge comes mainly from George Engleheart's speculations regarding the identity of the "St James's" mentioned in John Aubrey's unpublished manuscript. That said, Engleheart's conclusions were backed by Aubrey Burl, a renowned expert on Britain's megalithic culture, as well as by mineralogists Olwen Williams-Thorpe and R.S. Thorpe.[††]

## The Origins of Altar Stone 2

If it can be proved that the Berwick St James stones *do* constitute the separated fragments of Altar Stone 2 (see fig. 16 for a reconstruction of how they might have looked as a single megalith) then it is conceivable that, like Altar Stone 1 and the bluestones from West Wales, it was brought to Salisbury Plain from some other part of the British Isles.

Megalithic structures made of limestone include Oxfordshire's Rollright Stones stone circle, along with the nearby Kingsman standing stone and the Whispering Knights burial chamber. The recumbent stone circle known as Arbor Low in Derbyshire is also made of limestone blocks, as is the Druid Circle or Yockenthwaite Circle in Buckden, North Yorkshire. In addition to these, a stone circle at Machrie Moor on the Island of Arran in Western Scotland has alternating granite and limestone orthostats, showing the importance to its builders not only of limestone, but also of an apparent light/dark colour coordination in the circle's design.

Seeing Altar Stone 2 as limestone and its companion as grey-green micaceous sandstone is a potent combination, each perhaps expressing one half of a dualistic principle. Maria Wheatley proposes a male/female duality based on her conviction that each of the Altar Stones was composed of a slightly different hued micaceous sandstone.[46]

## Grooved Ware—The Scottish Connection

If, however, Altar Stone 2 was indeed made of limestone then its arrival at Stonehenge could well have been associated with the gradual emergence of the Grooved Ware tradition. Some of the earliest Grooved Ware sites outside of Orkney are in the Central Lowlands of Scotland. They include ceremonial complexes such as Balfarg/Balbirnie at Glenrothes in Fife; Luncarty in Perth and Kinross, and Littleour, also in Perth and Kinross.[47] In this last case the site includes a large ritual structure marked out by postholes. It is associated with a 2.3 kilometre (1.43 mile) long cursus monument dating from the Early Neolithic and known as Cleaven Dyke.[48] A similar monument, measuring 2.76 kilometre (1.71 mile) long and oriented west-southwest to east-northeast, lies immediately to the north of Stonehenge. Known as the Great Cursus, it too

[††] Minerologist Rob Ixer examined a thin section taken from one of the Berwick St James stones and concluded it was "Tisbury/Chilmark Stone," which he says is "biospararenite, a slightly glauconitic, slightly sandy fossiliferous shelly limestone with abraded bivalve debris." (See Daw 2022.)

was constructed in the Early Neolithic, that is, prior to 3400 BCE. What its function might have been is unclear, although positioned where it is could suggest it formed the northern boundary to the Stonehenge landscape.

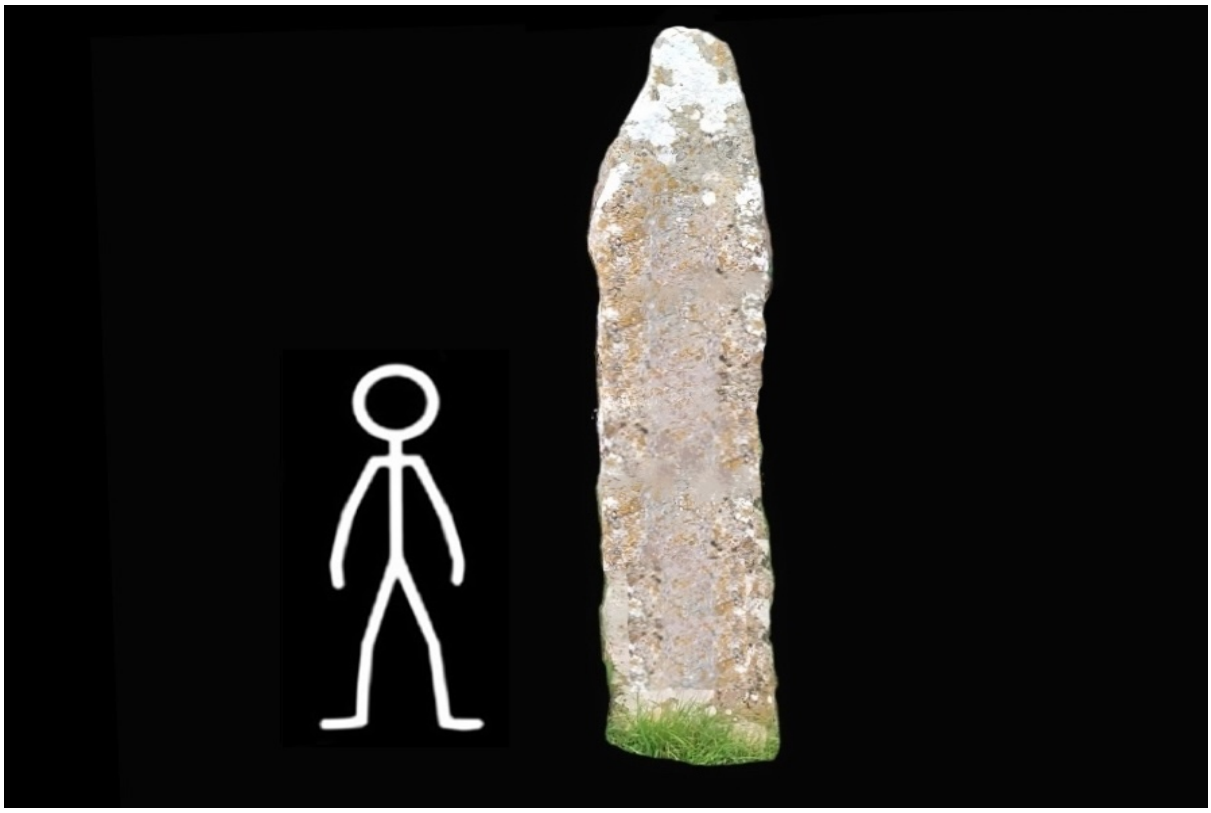

*Figure. 16. Reconstruction of how the two Berwick St. James stones might have looked as a single standing monolith. The concave depression running down its length it thought to have been caused when the stones were being used to bridge gullies. Credit: Andrew Collins.*

The reason for mentioning this is that the earliest manifestation of a sub-style of Grooved Ware known as Durrington Walls was found during excavations at Littleour.[49] The term Durrington Walls sub-style does not mean it was exclusively found in southern Britain, only that its existence was first recorded there. Its direct comparison, however, with the Grooved Ware from Littleour, as well as that found at other sites in the eastern Central Lowlands of Scotland, argues for either direct or indirect contact between these two regions as early as 3000 BCE.

This is not the only link between the Scottish Central Lowlands and the Stonehenge landscape. Isotopic analysis of tooth enamel of pigs and cattle found during excavations at Durrington Walls shows that in some cases the level of erosion is inconsistent with the animals being raised on chalk downland like that found across southern Britain. Indeed, the levels noted in some animals suggest they were raised in regions with a quite different radiogenic value. This includes Southwest England, South Wales, the Lake District, and Scotland, although not in the Scottish Highlands,[50] but in the Central Lowlands.[51] This tells us that fattened livestock would appear to have been brought from Scotland to Durrington Walls for what is considered to have been extensive feasting activities across the midwinter period.[52]

Grooved Ware expert Mike Copper and his colleagues propose that the spread of the Grooved Ware tradition from Orkney via the Scottish mainland into southern Britain was accompanied by the movement of “significant individuals,” arguably priests/priestesses or

shamans, who carried with them personal items expressing their own religious and cultural ideologies.[53] These items would have included Grooved Ware vessels kept aside for special activities such as seasonal feasts and ceremonies.[54] Once, however, this incoming group had integrated with the local population, Grooved Ware vessels would begin to be manufactured locally, yet now in a more localised style.[55]

Was this how the Grooved Ware People were able to unite Britain and Ireland during the Late Neolithic—integrating with regional societies and introducing them to new religious and cultural ideas? What we can say is that they prolifically erected structures of timber, built the first stone circles, created ceremonial centres marked by areas of ritual pits, and constructed the earliest henge monuments, often to memorialise preexisting structures.

Mike Copper and his colleagues, citing the work of Alison Sheridan, an archaeologist who specialises in the Neolithic and Bronze Age cultures of Britain and Ireland, propose that all this activity would have taken place, "within an environment in which 'elite' groups undertook increasingly long-distance journeys, acquiring prestigious esoteric knowledge through their connections to exotic, faraway places."[56] In other words, symbiotic relationships would develop between local communities and the incoming "significant individuals" belonging to the Grooved Ware tradition. In this way they absorbed the knowledge and wisdom of those they encountered as they themselves spread their own unique religious system, which had probably developed in the Orkney Isles hundreds of years beforehand.

All this goes some way to explain how Altar Stone 1 might have made its journey from northeastern Scotland to southern Britain. But what about Altar Stone 2? What can this new information tell us about *its* place at Stonehenge? Firstly, it should be noted that by 3000 BCE the Central Lowlands and Southwest Highlands and Islands of Scotland had become a crucial stepping stone for the expansion of the Grooved Ware tradition outside of Orkney. For example, pitchstone, a type of volcanic glass from the Isle of Arran, has been found at the Ness of Brodgar archaeological site on the Orkney Mainland as well as at the Balfarg Riding School mortuary house and henge in Fife.[57] This hints at a shared communication between these different regions at a time when the Grooved Ware People were making their first inroads into Southern Britain.

As we have seen, the Late Neolithic ceremonial complex of Machrie Moor on Arran includes a stone circle with alternating granite and limestone orthostats. What this shows is that, alongside granite, limestone was valued by the Grooved Ware culture as a building material, perhaps due to it having some kind of symbolic value.[‡‡] Limestone might thus have been utilised at sites in the Central Lowlands where livestock was being raised and fattened before being transported to places like Durrington Walls in southern Britain for seasonal celebrations around the time of midwinter.

If Altar Stone 2 was indeed made of limestone, then it could easily have come from one of the exposed outcrops close to the villages of Chilmark and Tisbury in Wiltshire, which are, respectively, just 18 kilometres (11 miles) and 21.5 kilometres (13.5 miles) away from Stonehenge. This is surely the most parsimonious solution regarding Altar Stone 2's point of origin.

Alternately, the fact that the Grooved Ware People were moving around large blocks of stone from one side of Britain to the other, seemingly due to their association with ancestral places and the ancestors themselves, raises the possibility that Altar Stone 2, like Altar Stone 1,

[‡‡] The whiteness of limestone when first quarried could easily have been associated with the moon, especially as its surface would very easily have reflected lunar light at the time of the full moon.

could have originated from much farther afield. If so then there is every chance it formed part of the Grooved Ware culture's expansion into the Central Lowlands of Scotland. If this is the case, we should perhaps be looking for a point of origin among the extensive outcrops of limestone either in the Scottish Central Highlands, or farther west among the Southwest Highlands and Islands, where some of the most important Grooved Ware complexes can be found (Kilmartin Glen in Argyllshire and Machrie Moor on the Isle of Arran in Ayrshire being prime examples).

One final point before we go on to examine where exactly the two Altar Stones might have stood at Stonehenge, and this is the subject of weathering. Critics of Altar Stone 2 being limestone argue that any standing stone made of limestone would have eroded considerably more than we see on the Berwick St James stones. In countering this claim, it should be noted that the Altar Stone uncovered by the Duke of Buckingham in the years following 1620 and transported to "St James's" was almost certainly buried prior to its discovery. Unlike Altar Stone 1, which remained visible on the surface in a recumbent position, Altar Stone 2 would appear to have been covered over in antiquity (otherwise Inigo Jones would surely have included it on his plan of the site made following his first visit there in 1620).

## Where Did the Altar Stones Stand?

This brings us to the next section of this monograph, which looks at where the Altar Stones might have stood. Could they have been positioned side-by-side, as a pair, arguably within the monument's central enclosure? This is certainly the opinion of Maria Wheatley,[58] and I have to agree this makes good sense.

On the Orkney Mainland, for instance, tall slim standing stones are known to have been erected in pairs to act as entrances into sacred enclosures.[59] We are reminded also of the twin central monoliths found in Pre-Pottery Neolithic enclosures at Taş Tepeler sites in southeastern Turkey such as Göbekli Tepe and Karahan Tepe. Their clear anthropomorphic appearance argues that, like the Stonehenge Altar Stones, they played a symbolic role, perhaps as cosmogonic twins associated with the concept of divine ancestors.[60] There are also clear indications that the edge-on orientations of these twin monoliths helped define the primary axis of enclosures, which if extended towards the local horizon would appear to have targeted important celestial objects, the Milky Way in particular.[61]

Stonehenge's Altar Stones arguably performed a similar role perhaps as early as construction Phase I, circa 3000-2935 BCE.

Spurred on by the recent discoveries surrounding both Altar Stone 1 and Altar Stone 2 Simon Banton went on to identify two previously unattributed stoneholes that could well have held these stones. The first, WA 3639, is positioned to the southwest of Stone 56, this being the remaining upright of the southwestern trilithon forming part of the Trilithon Horseshoe.[62] At its base a polished, although slightly damaged, greenstone hand axe was found.[63] It is of a type known to have been manufactured in Cornwall during the Late Neolithic age. As a high-status item it would have been greatly prized, implying that its placement in a stonehole was a deliberate act of deposition forming part of a foundation ceremony. If correct, then this indicates that WA 3639 did indeed hold a very important stone.[§§]

WA 3639's position immediately behind the southwestern trilithon suggests it was present prior to the construction of the Sarsen Circle and Sarsen Horseshoe during Stonehenge

[§§] Stonehole WA 3359 has also been cited as possibly supporting Altar Stone 1 (see, for instance, Cleal, Walker and Montague 1995, 268, and Wheatley 2024, 121). Like Altar Stone 1, WA 3359 is located beneath Stone 55b, the argument being that the former did not move far when it was felled by the collapse of Stone 55.

Phase II. What is more, it is located exactly on the site's main northeast-southwest axis line, which, as we have seen, targets, respectively, sunrise at the time of the summer solstice and sunset at the time of the winter solstice. Since Altar Stone 1 might afterwards have been laid flat at an angle of 81 degrees askew of the solstitial axis it makes sense that WA 3639 did indeed support Altar Stone 1, which lies immediately to the east of this position.[64]

The Location of Altar Stone 2

Having identified a suitable candidate for Altar Stone 1, Simon Banton looked for an unattributed stonehole that might have held Altar Stone 2. One made immediate sense. This was WA 2730 positioned some 19.81 metres (65.25 feet) northeast of WA 3639. What's so significant about this stonehole is that, in similar with WA 3639, it is located on Stonehenge's primary solstitial axis, which Simon suggests could mean that both stones were turned 81 degrees askew of this line to target sunrise on the winter solstice and sunset on the summer solstice. Even today the Altar Stone has this same alignment making sense of this proposal.

Quite incredibly the two sarsen uprights (Stones 1 & 30) where limestone packing stones were used are both in the vicinity of stonehole WA 2730. If therefore it did form the socket for a limestone monolith, then this is a significant realisation. Limestone fragments found in the vicinity of WA 2730 could suggest they were specifically placed in nearby stoneholes because of the presence nearby of an important limestone monolith.

What all this tells us is that both Altar Stone 1 and Altar Stone 2 probably stood within the central area of Stonehenge's earthen henge during construction Phase I, with only the 56 Aubrey Holes and, at a slightly later date, the Station Stone Rectangle being present (see figs. 17 and 18 for reconstructions of how the two Altar Stones might have been positioned during Stonehenge I, circa 3000-2935 BCE).

Curiously, the midway point between the two stonehole candidates, WA 3639 and WA 2730, defines the monument's approximate centre point as determined by its earthen henge (see fig. 19). That the two Altar Stones would have been equally spaced either side of this centre point only strengthens the conclusion that they were in place during construction Phase I.

The fact that the Altar Stones would have been spaced 19.1 metres (65.25 feet) apart might seem restrictive in determining them as a pair. These distances are, however, relative to the size of the monument. Stonehenge I with its earthen henge was as much as 110 metres (360 feet) in diameter making sense of why its builders might have spaced out its two central monoliths in the manner implied by the calculated gap between stoneholes WA 3639 and WA 2730.[***]

[***] Banton now acknowledges (2024b) that prior to his own realisation that stonehole WA 3639 was the socket for Altar Stone 1 others had earlier come to the same conclusion. Aubrey Burl in his 1987 book *The Stonehenge People* writes that, "South-west of the centre [of Stonehenge] there was a deep stonehole and it was conjectured that the Altar Stone may once have been placed there … If it had been considered the *persona* of a weapon-carrying guardian of the dead, then the worn-down Cornish stone axe discovered in its pit becomes explicable." (See Burl 1989 [1987], 207, original emphasis). This has to be a reference to WA 3639, although who might have originally made the connection is unclear. British historical writer Rodney Castleden in his 1993 book *The Making of Stonehenge* also concluded that WA 3639 not only held the Altar Stone (1993, 120, 127), but also that when upright the stone would have been located on the site's primary solstitial axis (1993, fig. 52 on p. 128). The subject of WA 3639 supporting the Altar Stone is discussed also in Cleal, Walker, and Montague 1995 (188), with the authors concluding that this remains the most likely scenario.

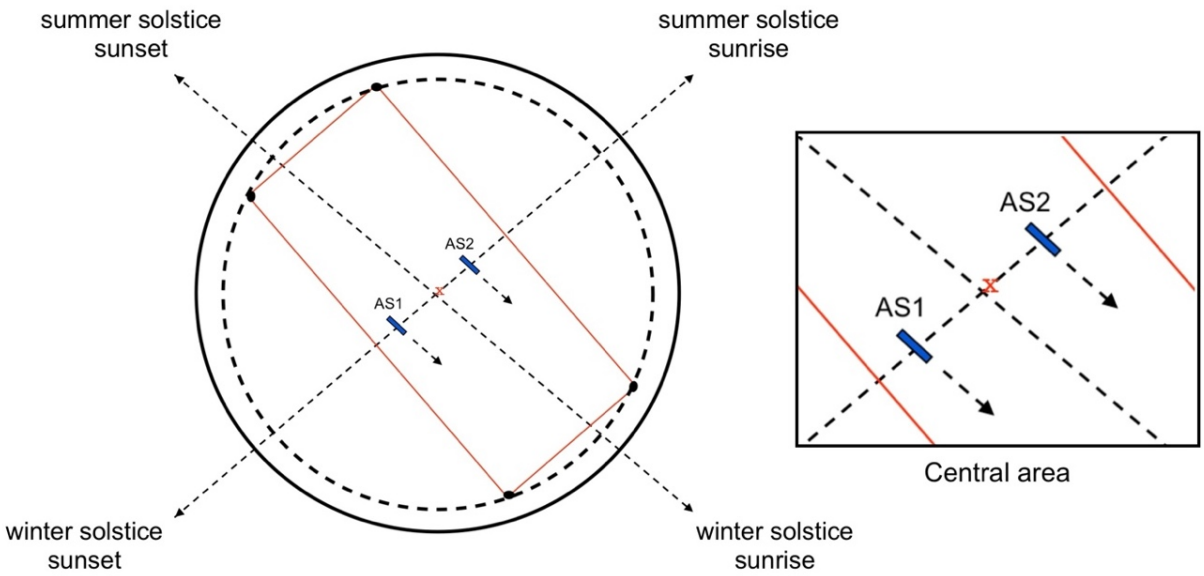


*Figure 17. Plan showing how the two Altar Stones might have looked at the end of Stonehenge construction Phase I,* or at the beginning of Stonehenge Phase II, *with Altar Stone 1 in stonehole WA 3639 and Altar Stone 2 in stonehole WA 2730. Note their relationship to the Station Stone Rectangle. The red x indicates the precise centre of the structure based on the circular nature of the henge. Credit: Andrew Collins.*

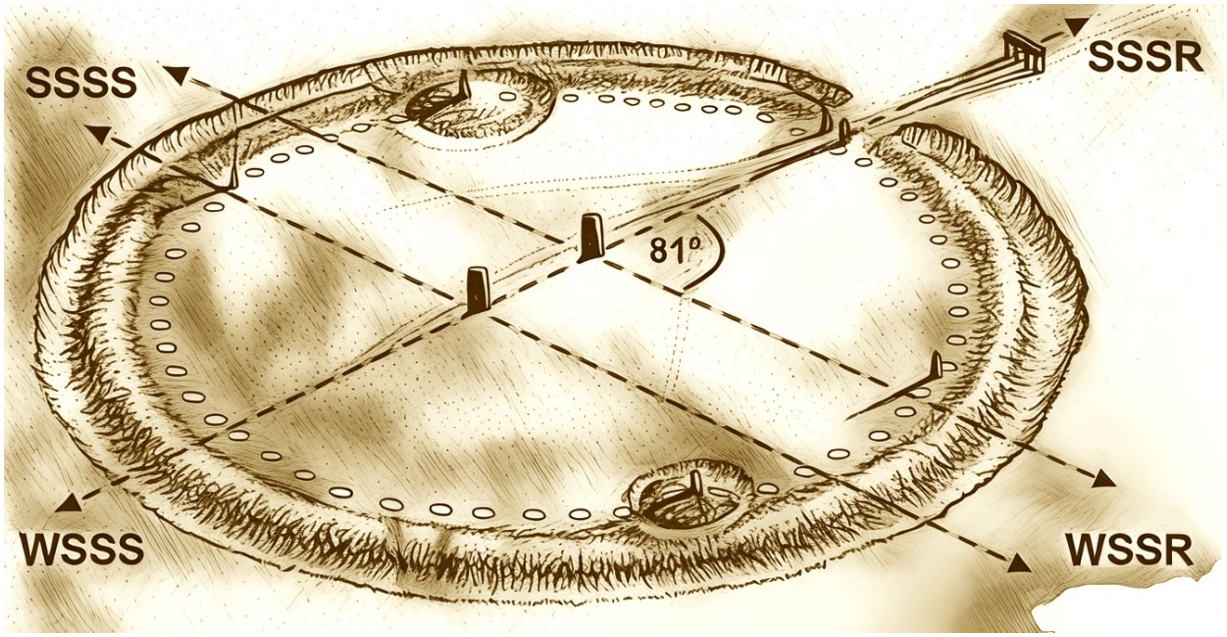


*Figure 18. Reconstruction of how the two Altar Stones might have looked by the end of Stonehenge construction Phase I showing their relationship to the four solstitial directions of the calendar year. Credit: Public domain/Andrew Collins.*


*Figure 19. Google earth image of Stonehenge showing the positions of WA 3639 and WA 2730, along with the centre point between them. Credit: Google Earth/Andrew Collins*

Bush Barrow Lozenge and the Positioning of the Altar Stones

One further point of interest regarding the positioning of the Altar Stones in stoneholes WA 3639 and WA 2730 concerns what is known as the Bush Barrow Lozenge. This is a thin sheet of gold 184 millimetres (7.25 inches) by 156 millimetres (6.15 inches) in size discovered in 1808 by pioneering archaeologists Sir Richard Colt Hoare and William Cunnington as the latter excavated a bowl barrow forming part of the Normanton Down barrow cemetery, situated just one kilometre (0.7 of a mile) southwest of Stonehenge.[65] The mound contained an individual, described as "stout and tall," who due to the high-status items found alongside his body is thought to have been a regional ruler or chieftain, both in a secular and in a spiritual sense. He lived during the Early Bronze Age, circa 1950 BCE, this being as much as 400-500 years after the disappearance of the Grooved Ware culture. His seat of power was almost certainly Stonehenge itself, for as we shall see, the gold lozenge, which was found placed on the skeleton's chest, has very specific connections not only with the position and layout of the monument, but also with the proposed alignment of the two Altar Stones.

The Bush Barrow Lozenge bears on its upper surface a geometric pattern featuring a series of four diamonds, one nesting inside the other (see fig. 20). The smallest lozenge is divided into nine diamond shaped cells, while the outermost diamond is made up of 36 interlocking triangles, nine on each side.

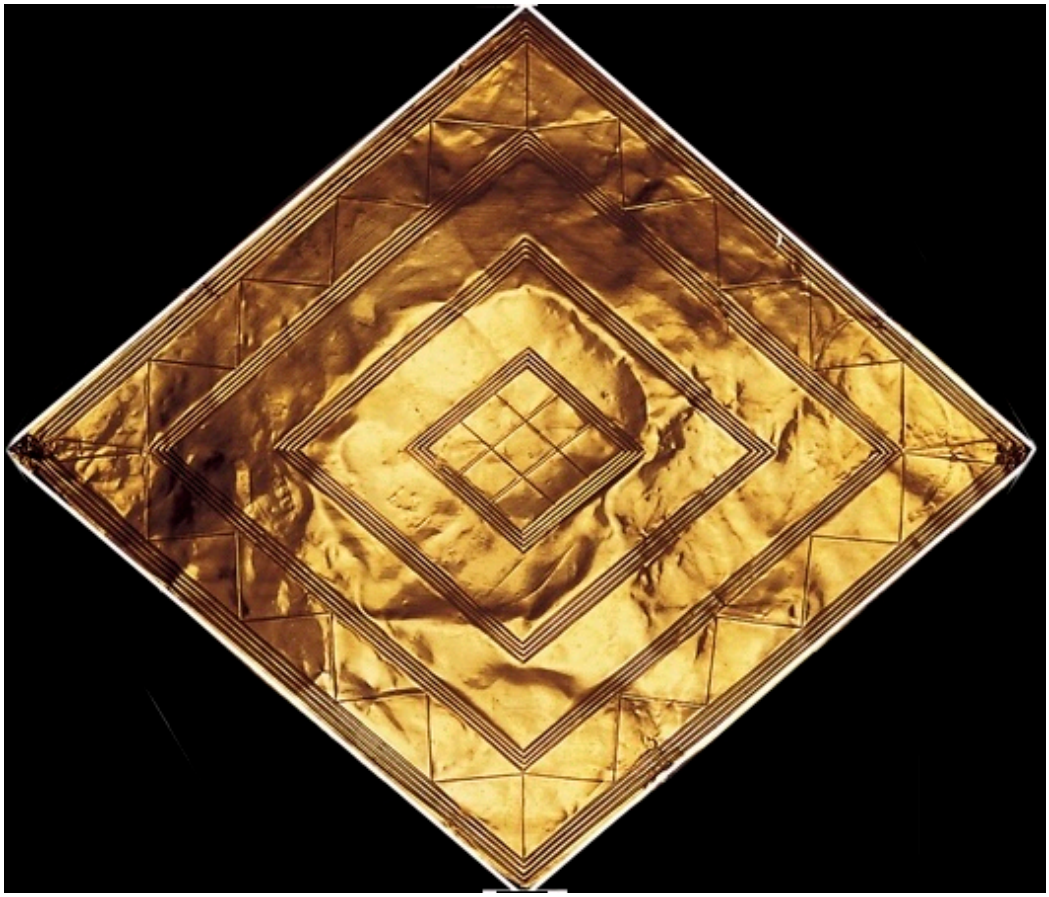

*Figure 20. The Bush Barrow Lozenge. Credit: Anthony Johnson via Wikipedia.*

Very clearly the number nine seems important to the panel's design and since 36 is four times nine its use in defining the number of triangles making up the outermost diamond can be seen as a fourfold expansion from the central diamond containing nine internal cells. In other words, if the innermost diamond has a numeric value of nine (due to it being made up of nine inner cells), an equal expansion outwards to embrace the next diamond would provide a value of 18, with a further expansion to encompass the next diamond making a total of 27. One final expansion embracing the outermost diamond would imply a total value of 36, the number of triangles it contains.[†††] Ninefold symbolism attached to an artefact almost certainly associated with Stonehenge is interesting as the present author has detected the use of a unit of measure equalling 9 imperial feet (2.743 metres) in connection with the layout of the monument.[66] A land measure equalling 9 English feet known as a lateral yoke (*gesseylyeu* or *cessel-yeu* in Welsh) formed part of the Venedotian Code, established by a legendary king of the Welsh kingdom of Gwynedd named Dyfnwal Moelmud, who reigned in the fifth century BCE.[67] This suggests that a unit of measure equalling 9 imperial feet could be very ancient indeed.

[†††] A full treatment of the symbolism, geometry and numerological expansions of the Bush Barrow Lozenge is forthcoming from Nick Davies (see Davies 2025).

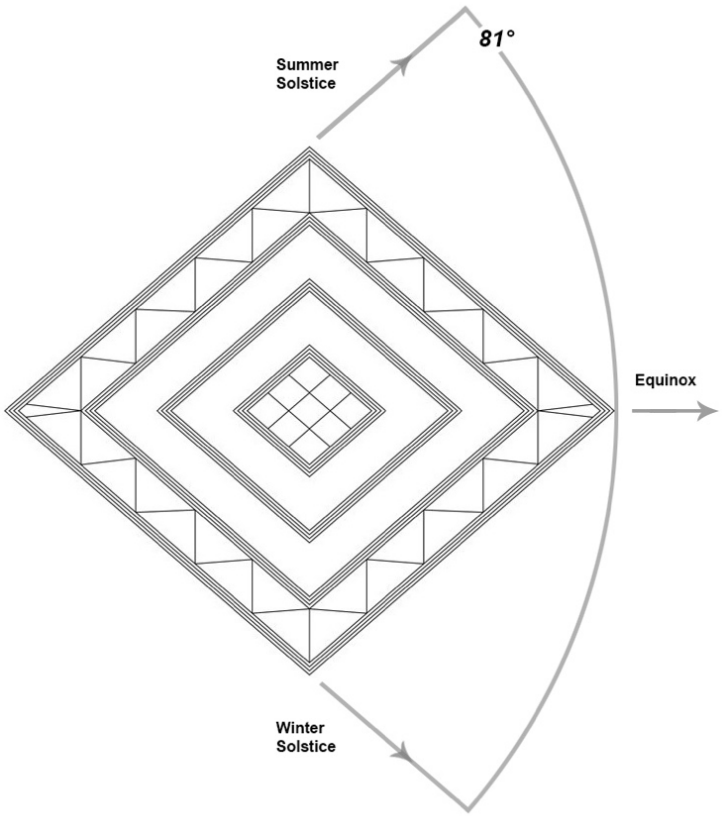


*Figure 21. The 81-degree angle formed by the longest sides of the Bush Barrow Lozenge (Credit: BigToe7000 via Wikipedia).*

Even further linking the Bush Barrow Lozenge with Stonehenge is the fact that the angle determining the length of its longest sides is 81 degrees (see fig. 21),[‡‡‡] the same angle formed by the monument's main solstitial axis and the suspected alignment of the two Altar Stones, which, as we have seen, was arguably towards sunrise on the winter solstice and sunset on the summer solstice. An angle of 81 degrees at Stonehenge thus defines the most northerly and most southerly risings and settings of the sun at the time of the solstices.[68] Go half a degree farther north or farther south and the angle will change. It therefore becomes possible that the Bush Barrow Lozenge was designed to represent the sun's passage from solstice to solstice and back again *as viewed from Stonehenge.*

If the Altar Stones were, as we suspect, positioned on Stonehenge's solstitial axis, with their narrow edges turned 81 degrees askew of this line, then this allows us to contemplate their positioning with respect to the geometrical design of the Bush Barrow Lozenge. Doing this shows the Altar Stones perfectly positioned in relationship to the lozenge's 81-degree angle, which, as we have seen, defines the site's twin solstitial axes (see fig. 22).

Some might question how a gold item dating from the Early Bronze Age, circa 1950 BCE, can reflect Stonehenge's structural layout determined, at least in part, over a thousand years beforehand. However, the geometrical patterning of the Bush Barrow Lozenge was most likely based on a much earlier original. Not only are nesting diamonds present within Grooved Ware rock art in the Boyne Valley of Ireland and on the Orkney Isles of Scotland, but they also appear on one of the two thin plaques of chalk, each around 64 millimetres (2.5 inches) in size, found

[‡‡‡] I looked at the angles made by all four of the Bush Barrow Lozenge's nesting diamonds and found that the average from eight instances for the short angle is 80.75 degrees with that for the wider angle being 100.125.

alongside fragments of Grooved Ware pottery at the base of a pit uncovered when the A303 trunk road, immediately southeast of Stonehenge, was widened in 1968. Each displays very specific incised designs that according to Aubrey Burl were "executed with care and, resting where they did, it seems clear that they had a powerful meaning."[69]

Almost certainly these plaques came from the Grooved Ware period, further hinting that the Bush Barrow Lozenge is simply a copy of a pre-existing design. In this manner Stonehenge's solstitial axes and perhaps even its underlying geometry and numeric significance were preserved in abstract form, the reason we can only assume why the Bush Barrow Lozenge was found on the chest of a powerful chieftain whose seat was Stonehenge itself. He was quite literally wearing an abstract representation of Stonehenge around his neck!

Should this synchronization between the Altar Stones and the Bush Barrow Lozenge be considered meaningful then the latter's geometry can be seen to divide the gap between the two stones into three equal parts based on the positioning of the diamond's nine inner cells (see, once again, fig. 22).

Since the distance between the Altar Stones, based on their placement within stoneholes WA 3639 and WA 2730, can be determined to be 65.25 feet (19.89 metres) this implies that any threefold division of this distance generates a linear value for each section of 21.75 feet (6.63 metres).[§§§] As outlined below, this is also a figure that features in connection with the Station Stone Rectangle, which can be shown to accurately frame both Altar Stones. Indeed, being situated on Stonehenge's primary solstitial axis the two stones near perfectly bisect this rectangle into two equal halves. This is a significant realisation as the proportions of the Station Stone Rectangle have long been recognised as displaying a whole number ratio of 12:5.[70] That is, if its longest sides can be seen to equal 12 units then its shortest sides will always equal 5 units (see fig. 23).

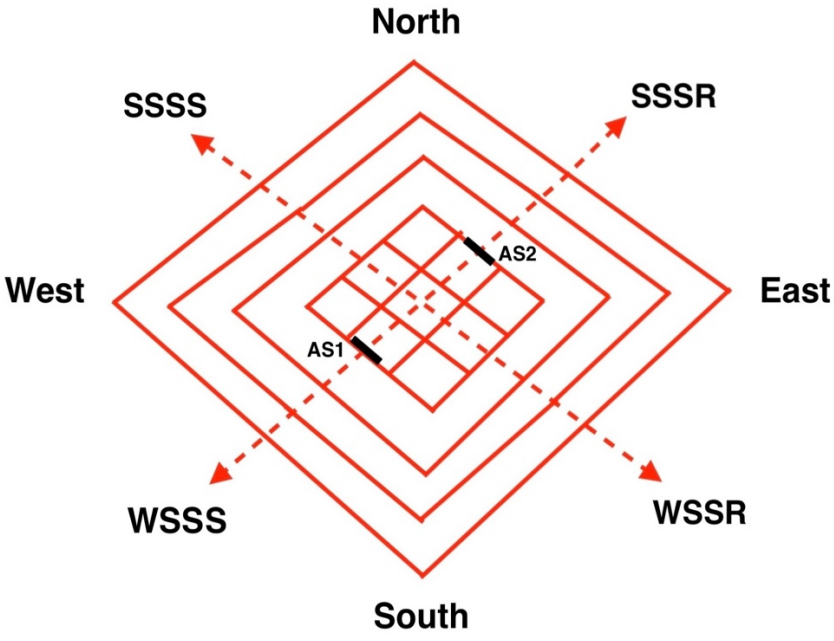


*Figure 22. The geometry of the Bush Barrow Lozenge overlaid on Stonehenge's central area, demonstrating how the design's cross axes accurately reflect the site's solstitial risings and settings. The positions of the two Altar Stones are shown as black rectangles.*

[§§§] I shall use imperial measures as a priority in this section since they are more easily understandable in terms of ancient metrology and fractalisation.


*Figure 23. Google Earth image showing the positioning of the two Altar Stones (based on their placement within stoneholes WA 3639 and WA 2730). They fall on a line that near perfectly bisects the Station Stone Rectangle into two equal halves, the rectangle itself having a whole number ratio of 12:5.*

William Dibble of Brigham Young University was the first to notice the presence of these "Pythagorean" triangles in the design of the Station Stone rectangle, an observation he made in a paper titled "A Possible Pythagorean Triangle at Stonehenge" published in 1976.[71] Earth mysteries writer and geometrician Robin Heath points out that a right-angled triangle with sides equalling 12 and 5 units will have a hypotenuse of 13 units, showing its relationship with both the 12-month solar year and the 13-month lunar cycle.[72] It is for this reason that Robin uses the term "lunation triangle" to describe a right-angled triangle with a ratio of 12:5:13.

The Number 261

A connection between the Station Stone Rectangle and the lunar calendar has always seemed likely in the knowledge that its longest sides target the most northerly setting and the most southerly rising of the moon across its 18.61-year standstill cycle. Calculations regarding the size of the Station Stone Rectangle can, however, vary, a matter not helped by the fact that two of the Station Stones (Stones 92 & 94) are missing today. Having said this, the rectangle's overall length is generally given as anything between 261 feet (79.55 metres) and 264 feet (80.47 metres).[73] If a linear value of 261 feet can be considered valid then by dividing this into 12 equal parts—as per the whole number division of its sides—the value of each unit would be 21.75 feet, the same as that achieved by dividing the distance between Altar Stones 1 and 2 into three equal parts.

The distance traced between the Heel Stone, situated beyond the henge to the northeast, and the centre point between the two Altar Stones also happens to be in the range

of 261 feet.[****] Originally, it should be pointed out, there were two Heel Stones. One has always been known about, but the stonehole for the second was only discovered in 1979 during excavations undertaken by writer, broadcaster and archaeologist Mike Pitts.[74] It lie to the north of the other one, and celestial calculations suggest that the gap between the two stones would have accurately targeted the first glimmer of the sun as seen from the centre of Stonehenge on the summer solstice in 3000 BCE.

Was the suggested 261-feet distance between the centre of the Altar Stones and the gap between the Heel Stones deliberately chosen to determine the monument's foundation point; the same distance afterwards being applied to the length of the Station Stone Rectangle, which lies centrally placed and at right angles to this line? (See fig. 24.)

Using the expansion process offered by the geometry of the Bush Barrow Lozenge, based on the positioning of the two Altar Stones (as shown in fig. 22), tells us that the diagonal of each of the lozenge's nine inner cells equals 21.75 or 261 inches. This would mean that the diagonal of the first large diamond has a linear value of 65.25 feet (3 x 21.75 feet), the suspected distance between the two Altar Stones, while the diagonal of the outermost diamond would, by this same principle, possess a linear value of 261 feet.[††††] Not only would this proposed geographical basis behind the design of the Bush Barrow Lozenge accurately define the extent of the Station Stone Rectangle and the positioning of the two Altar Stones, but it also defines the distance between the centre of the two stones and the position of the two Heel Stones (See fig. 25).

The Mayan and Vedic Connection

All this could, of course, be nothing more than coincidence. The product of an over imagination. That said, 261 is 9 x 29, once again hinting at the importance of the number nine in Stonehenge's underlying geometry, while 29, or more accurately 29.53, is the length in days of a synodic lunar month (the period from one full moon to the next). Among the Quiché Maya of Guatemala 261 days formed the alternative rendering of the Maya's 260-day Tzolk'in calendar using nine lunations of 29 days without the involvement of fractions.[75] The Tzolk'in constituted the religious calendar of the Maya. It was made up of 20 periods, each of 13 days, making a total of 260 days (20 x 13 = 260).

We find also that 261 is important is Vedic tradition. It is the number of days attributed to *Surya,* the sky or heaven, in the civic solar year of 360 days, with the rest of the year being broken down into 78 days of *Vayu* (space or air) and 21 days of *Agni* (fire or earth).[76] This same numeric sequence is found in the design of Vedic fire altars known as *vedi*. Each one is constructed using 360 mud bricks, 21 being used around the *gārhapatya* (or earth altar), 78 around the *dhisnya* (or space altar), and 261 around the *ahavanıya* (or sky altar).[77]

In addition to fire altars, 261 crops up in connection with the numeric importance of the *Rig Veda,* a collection of sacred Vedic hymns or *sūktas* written in Sanskrit. According to Vedic tradition the verse count for the *Rig Veda* is ideally 10,440, corresponding to the number

[****] The first person to note that there is just "a quarter of a metre" difference between the length of the Station Stone Rectangle and the distance between the centre of the Aubrey Holes and the Heel Stone was Alan Penny, a fact recorded by John Edwin Woods' in his classic work *Sun, Moon and Standing Stones* (1978, 169).

[††††] The threefold division of the distance between the two Altar Stones provides a value of 65.25 feet (3 x 21.75 feet) for the diagonal of the first big diamond. Using the same expansion process generates a linear value of 130.5 feet (65.25 + 65.25) for the second diamond, 195.75 (130.5 + 65.25) for the third diamond, and 261 feet (195.75 + 65.25) for the outermost diamond.

of sky days in 40 years, which is 10,440 days (in other words 261 x 40),‡‡‡‡[78] while another text, known as the *Atharvaveda,* traditionally has 5220 verses, corresponding to 261 sky days × 20 years, which is 5220 days.[79] Finally, the total verse count for all four books of the *Vedas* is 20,358, which is 261 sky days x 78 years making a total of 20,358 sky days.[80]

Lastly, 261 is the number of the sky or heaven in what is known as *Śrauta* rites or *Agnicayana,* which feature animal sacrifices and the construction of a special bird-shaped altar.[81] These Śrauta rites, which are rarely practiced today, are thought to date back to the Indus Valley civilization.[82] If so, then it means they are at least 3000 years old.

Other examples of the importance of the number 261 in Vedic tradition could be cited, although enough is presented here to show that a period of 261 days refers to a proportion of a civil solar year with a length of 360 days.§§§§ Why exactly a period of 261 days became so important to the Vedic calendar is unclear. It could have been because of its basic synchronization with nine synodic cycles of the moon (9 x 29), although that doesn't explain why this particular number of cycles was significant in its own right.

As we see next, the presence of fractions and multiples of the number 261 within the design of Stonehenge could also have calendrical associations.

## Thom's Megalithic Yard

Simon Banton (pers. comm) pointed out that 65.25 feet (19.89 metres), the calculated distance between the two Altar Stones using stoneholes WA 3639 and WA 2730, is very close to the value of 24 megalithic yards (MY). A megalithic yard is a hypothetical unit of measure equalling 2.72 feet (0.829 metres) that engineer Alexander Thom (1894-1985) found in connection with the layout of dozens of megalithic monuments across the British Isles.[83]

As we have seen the unit of measure used in the creation of the 12:5 whole number ratio of the Station Stone Rectangle, which is present also in the division of the distance between the two Altar Stones into three parts, is 21.75 feet. This approximates to 8 MY, a fact noted by Robin Heath.[84] By this same token 261 feet, the length of the Station Stone Rectangle and the proposed distance between the centre of the Altar Stones and the gap dividing the two Heel Stones, equals 96 MY.

Simon was naturally disappointed that there was no exact match between Thom's megalithic yard and the unit of measure implied by the spacing of the two Altar Stones. This was unfortunate. However, what if the megalithic yard employed in the layout of Stonehenge was very slightly at variance to its usually cited value of 2.72 feet? What if the unit of measure defining the spatial placement of all these key features at Stonehenge, calculated to be 21.75 feet, or 261 inches, *really is 8 MY in length?*

To investigate this possibility simply divide 21.75 feet into 8 equal parts. Doing this provides a length measure of 2.71875 feet, that is 2 feet 23/32 inches, 82.8675 centimetres, or 32.625 inches, which is just 0.00125 of a foot, or alternately 0.015 of an inch, short of Thom's own predicted length for a megalithic yard. Indeed, 2.71875 feet is well within the tolerance level Thom set for the megalithic yard in 1967, which was 2.720 feet +/- 0.003 feet.[85]

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‡‡‡‡ Of potential interest here is that 261 is 29/40$^{th}$ of 360, the length of a civil solar year. In a calendar round of 1440 (minutes, hours, days, years) 29/40 becomes the fraction 1044/1440. As we have seen, 1044 is the root number behind the Rig Veda's 10,440 verse count corresponding to 261 sky days x 40, equalling 10,440 days. In the Mayan calendar 1440 days constitutes *4 tun,* made up of 4 x 360, showing that, in similar with Vedic tradition, the Maya used the civil solar year of 360 days.

§§§§ The story of the god Vishnu taking three steps as he strode across the universe in his form as Trivikrama ("the god who stepped thrice") is surely the basis of this story. One step he planted on *Agni* (fire or earth), one step within the *Vayu* (air), and the third in the sky as *Surya* (Sun). (See Griffith, 1899, White Yajurveda 5.15).

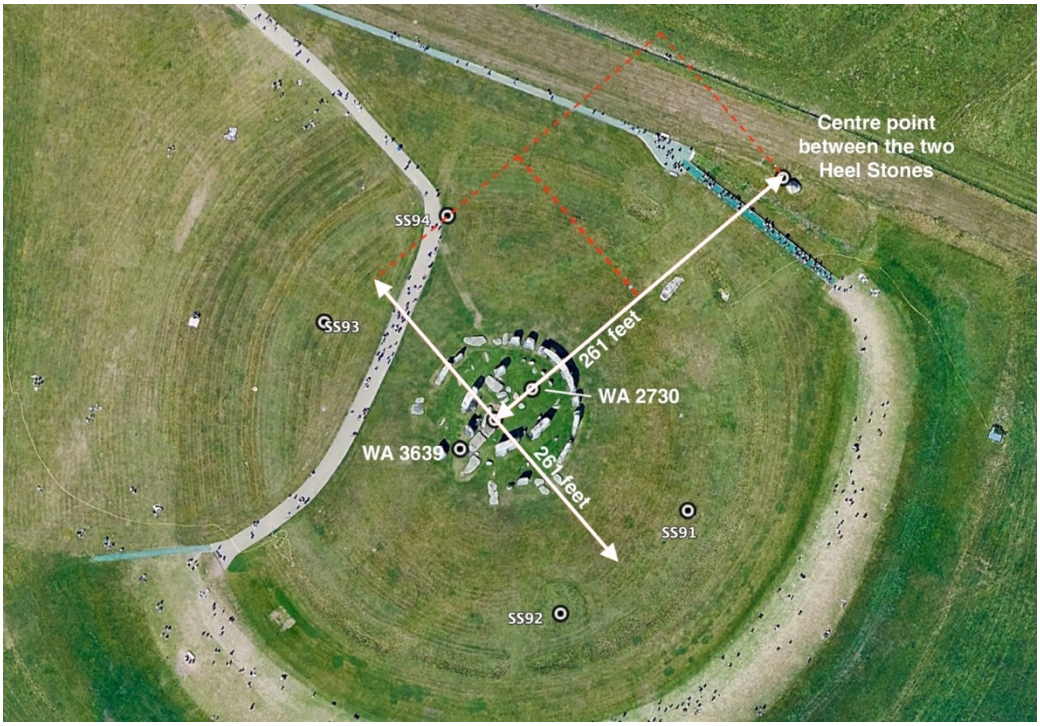


*Figure 24. Proportional relationships a Stonehenge based on the 261-feet distance between the Heel Stones and the centre of the two Altar Stones. Credit: Google Earth/Andrew Collins.*

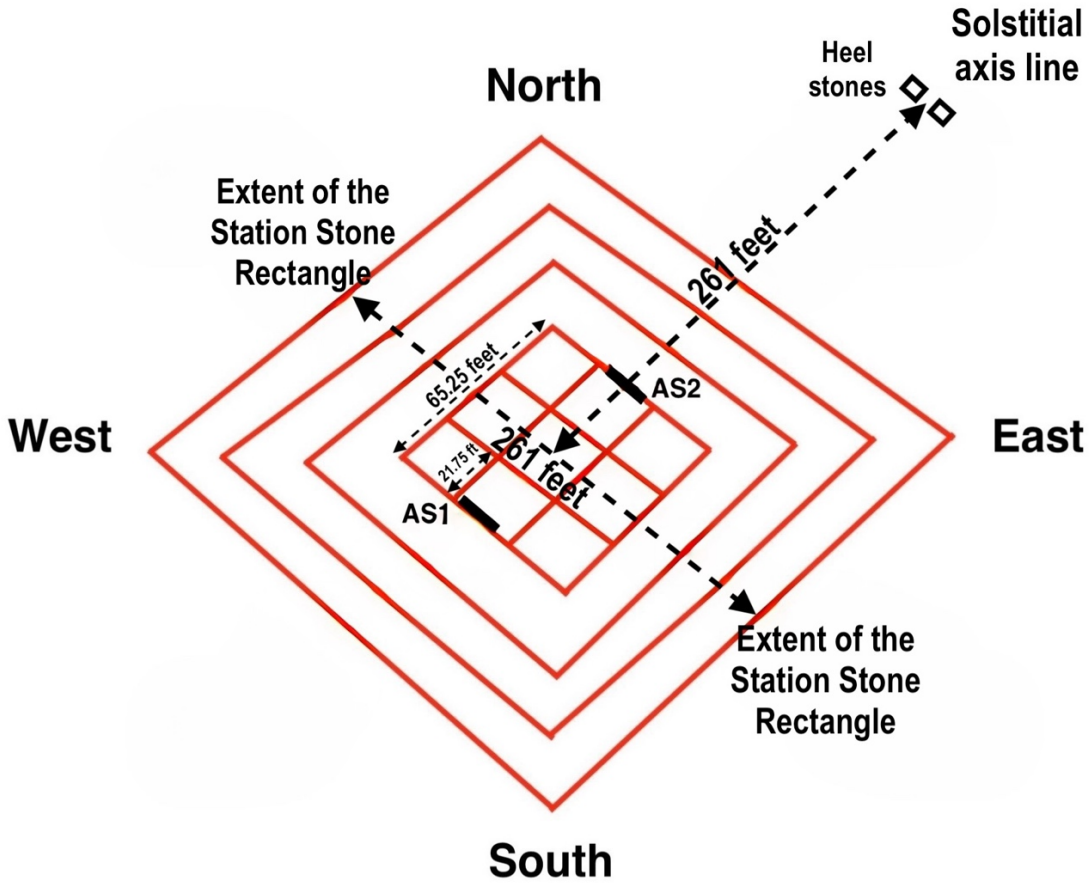


*Figure 25. Underlying geometry at Stonehenge based on the suggested expansion process of the Bush Barrow Lozenge. Altar Stones 1 and 2 are marked as black rectangles. Credit: Andrew Collins.*

As a fraction, 32.625 inches, or 32⅝ inches, can be written, quite tellingly, as 261/8 inches. Indeed, 32⅝ inches can itself be divided into 261 equal parts, each with a linear value of ⅛th of an inch (3.175 millimetres). We can see, therefore, that a megalithic yard of 2.71875 feet or 32.625 inches becomes a perfect fraction of a unit of measure equalling 261 inches, in other words 21.75 feet or 8 MY. What is more, 65.25 feet, or 65¼ feet, the proposed length of the gap between the Altar Stones, is not only three times this amount, but as a fraction it can be written as 261/4 feet. (How exactly these and other measures found at Stonehenge can be seen as both fractions and multiples of the megalithic yard is outlined in fig. 26.)

Worth noting also is the fact that the radius of the Aubrey Holes is 53 MY, which in units of 2.71875 feet corresponds to 144.09375 feet (144 feet 3/32 inches), while the distance between stone hole WA 3639, which almost certainly held Altar Stone 1, and the Heel Stone is exactly 108 MY.

A value for the megalithic yard of 2.71875 feet, or 32.625 inches, can thus be shown to synchronize perfectly with Stonehenge's underlying geometry. What is more, Robin Heath and his brother, the engineer Richard Heath, have proposed the existence of an archaic megalithic yard of exactly this length.

| Components at Stonehenge | Value in megalithic yards of 2.71875 feet | Length in imperial inches | Inch length in fractions or multiples of 261 | Length in imperial feet | Feet length in fractions of 261 |
|---|---|---|---|---|---|
| Stonehenge megalithic yard | 1 MY | 32.625 | 261/8 | 2.71875 | 261/96 |
| Unit of measure used at Stonehenge | 8 MY | 261 | 261/1 | 21.75 | 261/12 |
| Distance between the two Altar Stones | 24 MY | 783 | 261 x 3 | 65.25 | 261/4 |
| Centre of the Altar Stones to the gap between the two Heel Stones & length of Station Stone Rectangle | 96 MY | 3132 | 261 x 12 | 261 | 261/1 |

*Figure 26. Components of Stonehenge reflecting dimensions representative of a megalithic yard of 2.71875 feet along with their individual fractalisation based on the number 261. Credit: Andrew Collins.*

The Proto Megalithic Yard (PMY)

A more primary form of the megalithic yard was first determined by Robin and Richard Heath following the former's investigation into the nature of the lunation triangle. Robin decided to reduce the base value of its shortest side from 5 down to 3 creating a new triangle with a ratio of 12:3 (see fig. 27). This, of course, changes the value of the triangle's diagonal. Instead of being 13, its value in the original lunation triangle, it now becomes 12.369. This Robin realised was extremely close to 12.3683, the number of lunar months in a solar year.[86] Robin sees this as further confirmation that the lunation triangle can be used to show the relationship between a solar year and lunar year. It also helps explain why, he says, the lunation triangle features within the design of the Station Stone Rectangle at Stonehenge.

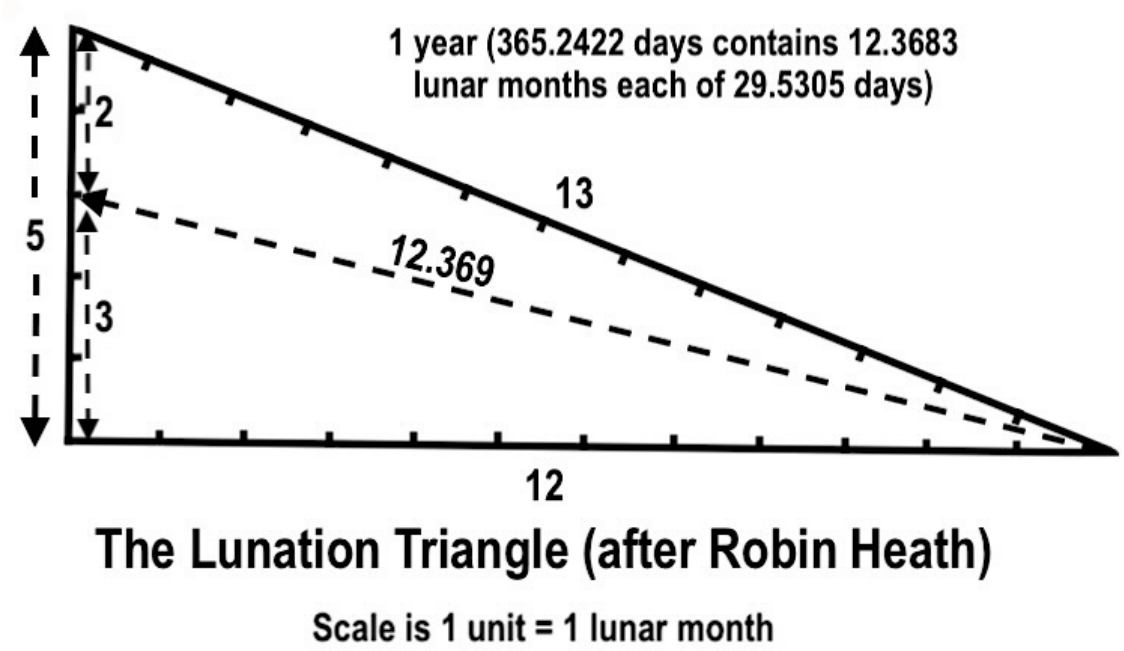


*Figure 27. The original lunation triangle showing the reduction of its base value from 5 down to 3, and how the value of what Robin Heath calls the "intermediate hypotenuse" becomes almost exactly the number of lunar months in a solar year. Credit: Andrew Collins/Robin Heath.*

In addition to acting as a means of determining the relationship between the solar and lunar year Robin and Richard Heath also realised something else of importance about a right-angled triangle with sides of 12 and 3 units. They found that it also demonstrates the temporal relationship between three solar years and three lunar years, the former being ideally 1095¾ days (365 1/4$^{th}$ days x 3) in length and the latter 1068⅛ days (356 5/12$^{th}$ days x 3). (See fig. 28 to fully understand this principle.)

What is more, if the size of a 12:3 ratio lunation triangle is considered to reflect imperial inches then each day in a solar year or lunar year would correspond to an inch on the ground, meaning that the disparity between three solar years and three lunar years would be 32⅝ day-inches (or 261/8 inches), a linear value that Richard Heath describes as a "proto megalithic yard," or PMY.[87] This, of course, is the exact same length as the megalithic yard achieved when the unit of measure incorporated into the design of Stonehenge and equalling 21.75 feet or 8 megalithic yards is divided into eight equal parts. This cannot be coincidence, and suggests that 2.71875 feet, or 32⅝ inches, could well be the true length of Alexander Thom's megalithic yard.

Interestingly, the angle created by a 12:3 triangle is constrained within a rectangle with sides equalling the same number of units. This means it is made up of four squares, each one with nine inner squares giving a total of 36. This exactly matches the ninefold expansion process offered by the geometry of the Bush Barrow Lozenge.

The use of imperial inches to represent days in the soli-lunar calendar was first confirmed to Robin and Richard Heath in 2010 following their survey a rectangular stone setting at Carnac, Brittany, known as the Quadrilataire de Manio. This was found to display inch-day measurements based on a 12:3 ratio lunation triangle.[88] The fact that this same lunation

triangle is present also in Stonehenge's Station Stone Rectangle is yet further confirmation that Simon Banton was correct to point out that the gap between the two Altar Stones equalled 24 megalithic yards.[*****]

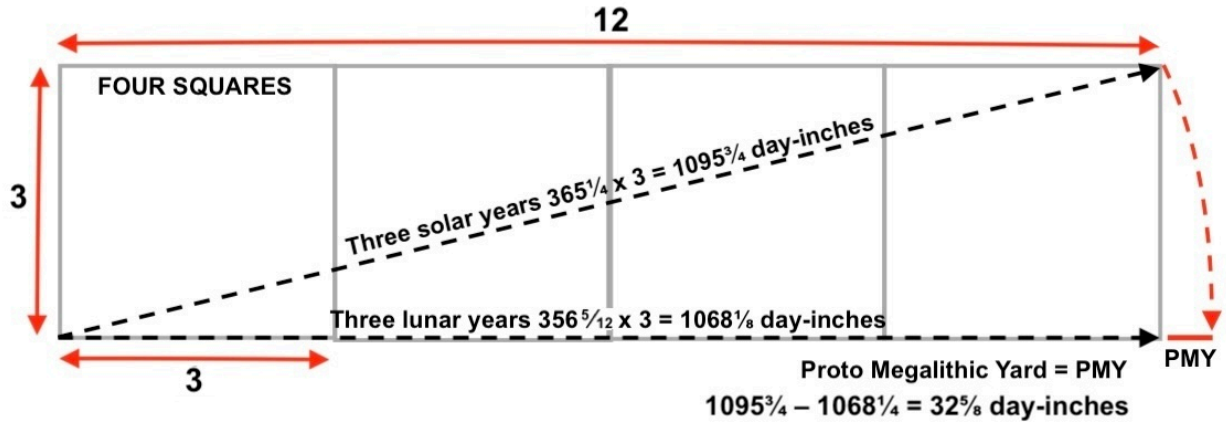


*Figure 28. A 12:5 lunation triangle with its base reduced to 3 units creates a fractional representation of the relationship between three solar years and three lunar years. If a day of 24 hours is represented by one inch on the ground then the excess between the two values would be 32⅝ day-inches. Robin Heath and Richard Heath determined this as the length of a proto megalithic yard (PMY). Note the rectilinear structure of the 12:3 lunation triangle, which is composed of four squares each with nine inner cells making 36 in all. Credit: Andrew Collins after Heath and Heath 2011).*

Where exactly this profound and, some might say, obsessive understanding of linear measures might have originated is outside the remit of this present monograph. What we can say, however, is that a deep understanding of what we might term cosmic fractalisation seems totally enmeshed within the design of Stonehenge construction Phases I and II. If such statements can be shown to be meaningful, then very similar celestial-based measurements must surely exist at many other megalithic monuments, not just in the British Isles, but in other parts of the world as well.

Conclusions

With its enormous wooden poles erected in stages between circa 8820-6500 BCE, Stonehenge would appear to have formed part of a rich ceremonial landscape that included Vespasians Camp, Blick Mead, and perhaps even a proto form of Stonehenge centred around the construction of a mound platform and the presence towards the direction of the summer solstice sunrise of a whole series of periglacial stripes in the chalk land surface. As Mike Parker Pearson and his colleagues have speculated, these factors were likely behind the establishment of the future site of Stonehenge as a place of special interest in the minds of the area's Mesolithic inhabitants with all roads, as they say, leading to these locations, Blick Mead in particular.

What seems important here is that all this was happening as much as 5500 years before the arrival in the Stonehenge landscape of the Grooved Ware People, who were almost

[*****] A linear value of 9 imperial feet determined by the present author (see Collins 2024) as being employed in the measurements of Stonehenge might be explained as an extension of any perceived fractalisation using a proto megalithic yard of 2.71875 feet or 32.625 inches. For instance, 261 feet or 96 MY is 29 x 9 feet while 144 feet, or 53 PMY, the ideal radius of the Aubrey Holes, is 16 x 9 feet.

certainly responsible for the construction of Stonehenge Phases I and II (and arguably Phase III), not only using locally sourced sarsen stone, but also bluestones from Wales.

The present Altar Stone is unquestionably the most exotic of all the foreign stones at Stonehenge. Its composition makes it unique as does its potential place of origin in northeastern Scotland. Its positioning and orientation argue for its presence at Stonehenge during construction Phase I making it clear that those behind its final transportation to the site were likely the Grooved Ware People. It remains possible, however, that Altar Stone 1 reached Salisbury Plain well before the arrival of the Grooved Ware People, although whether or not this was actually the case might never be properly understood.

The point of origin of Altar Stone 2 will have to remain a matter of conjecture. If made of a form of micaceous sandstone different to that of Altar Stone 1 then as Rob Ixer and Maria Wheatley have speculated it could indeed have come from South Wales. If, on the other hand, it was made of limestone then the most likely option is that it was sourced from one of the exposed outcrops of limestone close to Stonehenge. Alternately, if its transportation to Salisbury Plain did, as seems possible, form part of the expansion process of the Grooved Ware People into southern Britain then it could have come from much farther afield, arguably somewhere in Scotland, perhaps the Southwest Highlands and Islands where exposed outcrops of limestone have been exploited since prehistoric times.

Such megaliths might have been seen to embody active spirits or even an individual consciousness, representing either divine ancestors or celestial beings, helping us to better understand why such heavy stones were being transported from one end of the country to the other. In the case of the Altar Stones, it seems likely they were considered two halves of a whole, arguably even twins forming part of some long-lost cosmogony with echoes in current day Finno-Ugric and/or Proto-Uralic mythological tradition.

Putting Altar Stone 2 in the frame prompted the question of where exactly these monoliths might have stood within the confines of Stonehenge. Simon Banton has found two good candidates for their placement in stoneholes WA 3639 and WA 2730, which are both located on Stonehenge's principal solstitial axis. In this manner they would appear to have stood together as a pair some 65.25 feet (19.81 metres) apart, their narrow edges aligned, as Simon suspects, towards the winter solstice sunrise and summer solstice sunset.

In this manner the Altar Stones would have been permanently locked into the sun's annual cycle from solstice to solstice and back again, a matter encapsulated, seemingly, in the design of the Bush Barrow Lozenge, which seems to reflect the proportional dimensions and inner geometry found at Stonehenge. These would appear to have incorporated the use of a unit of measure equal to 2.71875 feet, or 32.625 inches, the proposed proto megalithic yard, its linear value appearing to contain both spatial and temporal numerics, the work of both Robin Heath and Richard Heath making this abundantly clear.

The fractal-like relationship between 261 and the proto megalithic yard can be easily demonstrated (see fig. 28) for 261 divided by 2.71875 is 96, the ideal number of megalithic yards defining the distance between the centre of the Altar Stones and the gap between the two Heel Stones, as well as the length of the Station Stone Rectangle, while 261 divided by 32.625 is 8, the number of proto megalithic yards making up the larger unit of measure found in association with various key components at Stonehenge. Of course, this could all be simply coincidence, although personally I do not think so. In my opinion, it is coded information being conveyed across time from a megalithic mindset that academics still struggle to understand.

| 1/8th of an inch Expansion/Fractalisation | In inches | In feet | In MY | Multiple of last value |
|---|---|---|---|---|
| 261 x 1/8th of an inch | 32.625 | 2.71875 | 1 | |
| 261 x 8/8th of an inch | 261 | 21.75 | 8 | 1 x 8 |
| 261 x 24/8th of an inch | 783 | 65.25 | 24 | 8 x 3 |
| 261 x 96/8th of an inch | 3132 | 261 | 96 | 24 x 4 |

*Figure 29. Key measurements derived from featured components at Stonehenge showing their mathematical relationship using the proto megalithic yard (PMY). Please note that 1/8th of an inch is employed as an expansion formula simply to show the fractional relationship existing between all these linear values. Credit: Andrew Collins.*

That the Altar Stones might have stood together as a pair in a manner comparable to the twin pillars at the centre of Pre-Pottery Neolithic enclosures at sites like Göbekli Tepe and Karahan Tepe in what is today southeastern Turkey is too strong to ignore. What then might have been the relationship between Stonehenge Phase I and these extraordinary installations constructed by Anatolia's Taş Tepeler culture as much as 11,600 years ago? The similarity between the two might turn out to be more than simply coincidence since it could well be that both cultures had a shared origin prior to the commencement of the Neolithic era.[89]

That the Stonehenge landscape might have gained some special status as much as 5500 years before Stonehenge Phase 1 is a mind-boggling prospect. It is one, however, that if properly understood could well lead to real answers regarding why large numbers of foreign megaliths were brought to Salisbury Plain from different parts of Britain to help create what is arguably the most iconic megalithic monument in the world. Understanding this process might even lead to fresh ideas regarding Stonehenge's original function, a matter explored elsewhere by the present author.[90]

Notes and References

[1]. Jones 1655, 56–57, 75.
[2]. See, for instance, Atkinson 1960 [1956], 57, 108–109. For a review of all early sources for the identification of the Altar Stone with the Cosheston and Senni formations see Williams-Thorpe and Thorpe 1992 and Ixer and Turner 2006.
[3]. Ixer and Turner 2006.
[4]. Bevins et al 2023.
[5]. Clarke et al. 2024.
[6]. Bevins et al. 2024.
[7]. Milligan 2011.
[8]. See, for instance, the map and accompanying display board created by Caroline Wickham-Jones in the Mesolithic room of the museum serving the Tomb of the Eagles on South Ronaldsay, Orkney.
[9]. Banton, pers. comm.
[10]. Piggott 1936.
[11]. See Collins 2018a.
[12]. Parker Pearson 2021.
[13]. Jacques 2014.
[14]. Parker Pearson et al 2022, 19. See also "Historic England Research Records: Monument Number 219856."

[15]. Darvill and Wainwright 2009, 12.
[16]. Field and Pearson 2010, 59–61, Parker Pearson et al, 2022, 23.
[17]. Field and Pearson 2010, 67.
[18]. Parker Pearson et al 2022, 23.
[19]. Parker Pearson et al 2022, 23.
[20]. Parker Pearson et al 2024, 25.
[21] “Historic England Research Records: West Amesbury Henge 1580342.”
[22]. Parker Pearson and the Stonehenge Riverside Project. [2012] 2013.
[23]. Kehoe 2000, 22–23.
[24]. “Stonehenge ‘Bluestone’ Quarries Confirmed 140 Miles Away in Wales” 2015.
[25]. Parker Pearson et al. 2015 and the references therein.
[26]. Parker Pearson et al. 2015.
[27]. Collins 2018a, Collins 2018b.
[28]. For a good summary of original sources for a second Altar Stone see Colt Hoare 1812, 139–140, 153–155.
[29]. Aubrey, *Monumenta Britannica,* unpublished manuscript, c. 1626-1641.
[30]. Engleheart 1933, 395.
[31]. Engleheart 1933, 396.
[32]. See Price 2007 for a full discussion on this subject.
[33]. Engleheart 1933, 396–397.
[34]. Burl 1989 [1987], 139–140.
[35]. Burl 1989 [1987], 139.
[36]. Williams-Thorpe and Thorpe 1992, 136.
[37]. Williams-Thorpe and Thorpe 1992, 136.
[38]. Wheatley 2024, 121.
[39]. Wheatley 2024, 124.
[40]. Noyes 1913, 152.
[41]. Grinsell 1975, 15.
[42]. Withering 1822, vol. i, 229–230.
[43]. "Bulford Henges (Entry number 1449706)."
[44]. “Bulford.” Wessex Archaeology website.
[45]. Parker Pearson and Field 2011, 49, and the primary sources quoted therein.
[46]. Wheatley 2024, 121–122.
[47]. Copper, Hamilton and Gibson 2021; Mclaren 2022
[48]. Barclay and Maxwell 1998.
[49]. Copper, Hamilton and Gibson 2021, 91, 97.
[50]. For cattle see Evans et al 2019. For pigs see Madgwick et al 2019.
[51]. Madgwick et al 2019.
[52]. Kennedy 2009.
[53]. Copper, Hamilton and Gibson 2021, 105.
[54]. Copper, Hamilton and Gibson 2021, 105.
[55]. Copper, Hamilton and Gibson 2021, 105-106.
[56]. Copper, Hamilton and Gibson 2021, 106, summarising the hypothesis of Alison Sheridan on this subject.
[57]. Copper, Hamilton and Gibson 2021, 85, 96.
[58]. Wheatley 2024, 121–122.
[59]. Towrie 2020, Towrie 2021.

[60]. Collins 2014, ch. 5.
[61]. Collins 2014, chs. 6–7.
[62]. Banton 2024a, Banton 2024b.
[63]. Banton 2024b.
[64]. Banton 2024b.
[65]. For full accounts of the discovery of the Bush Barrow Lozenge see Grinsell, 1979 and Needham, Lawson, and Woodward 2010.
[66]. Collins 2024a.
[67]. Venedotian Code, bk. II, ch. XVII, 5–6. See Owen 1841.
[68]. Daw 2024.
[69]. Burl 1989 [1987], 96.
[70]. Heath [Robin] 1995 [1983], 35, 38–42.
[71]. Dibble 1976.
[72]. Heath [Robin] 1995 [1993], 46–48, 55-58.
[73]. For 261 feet see Heath [Robin] 2019, and for 264 feet see Doutré nd.
[74]. Pitts 1981a; Pitts 1981b.
[75]. see Schultze-Jena 1954, 76; Earle and Snow 1985, 242.
[76]. Kak 1995, 11.
[77]. Kak 1992, 44, 48; Kak 1995, 7.
[78]. Kak 1995, 11.
[79]. Kak 1995, 12.
[80]. Kak 1992, 53; Kak 1995, 12.
[81]. Kak 2022, s.v. “Numbers,” 1088–1091.
[82]. See, for instance, Kenover 2006, 43, 44.
[83]. See Thom 1967, ch. 5, for a full account of his proposed “megalithic unit of length,” in other words the megalithic yard.
[84]. See, for instance, Heath [Robin] 2014, 39, 43–44.
[85]. Thom 1967, 43.
[86]. Heath [Robin] 2014, 52–54.
[87]. Heath and Heath 2011. See also Heath [Robin] 2014, 63–64, and Heath [Richard] 2021, 236–238.
[88]. Heath and Heath 2011. See also Heath [Richard] 2021, 14–16, and Heath [Robin] 2014, 62-65.
[89]. Collins 2018c, Collins and Little 2020.
[90]. Collins 2024a & Collins 2024b.

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(nd = no date of publication.)

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*Robin Heath (left) with his travelling lunation triangle, alongside the present author at Origins, held in Pewsey, Wiltshire, in November 2024.*