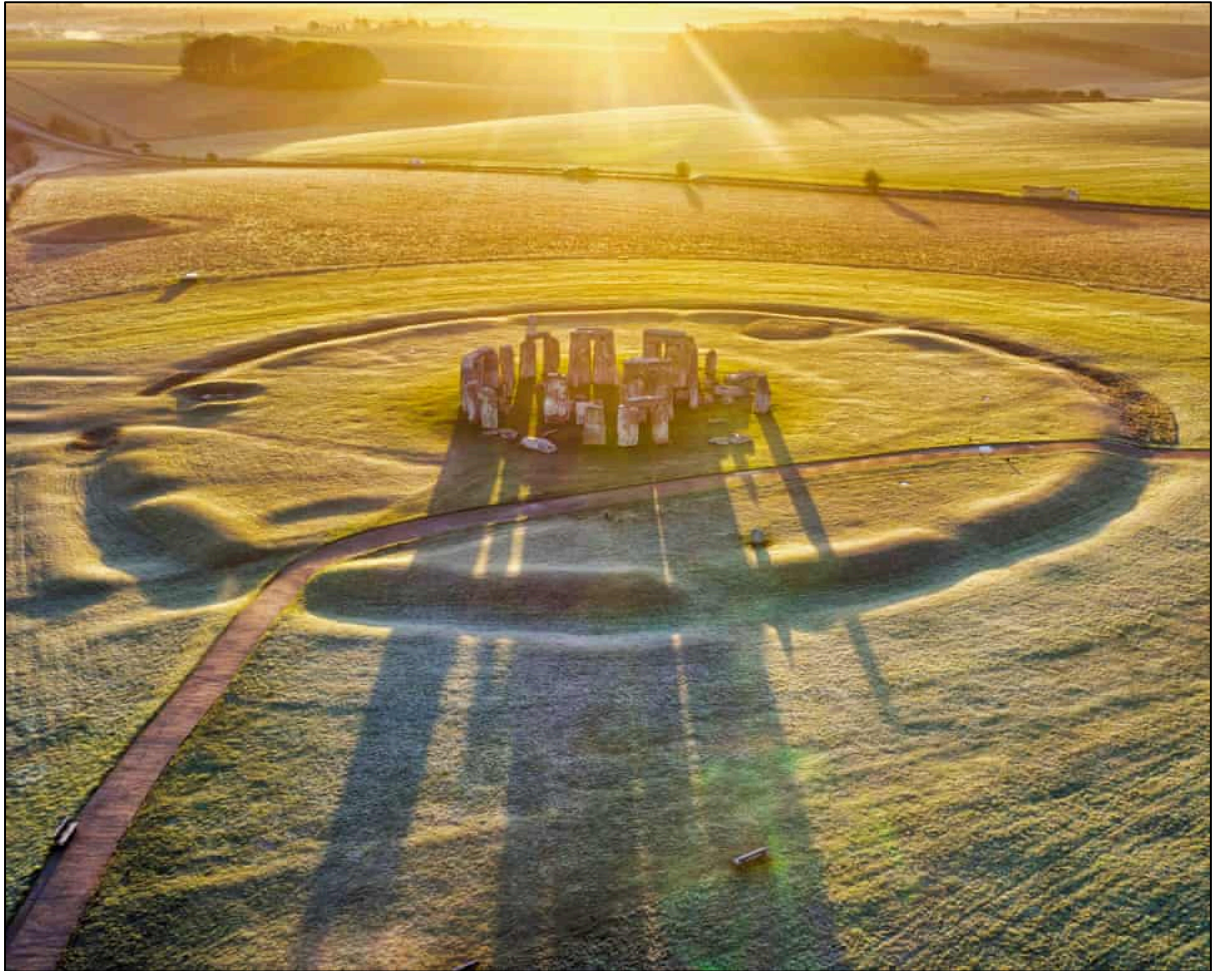


# How science is uncovering the secrets of Stonehenge

*If you see the majestic stones on Salisbury Plain as an emblem of England, think again. A major new British Museum exhibition connects them to many points and cultures across Europe through 1,500 years of immigration*



*Stonehenge at dawn.*

by Tim Adams  
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**A**mong the many treasures in the British Museum's forthcoming Stonehenge exhibition is a collection of carved and polished spherical stones, each about the size of a cricket ball. The stones are 5,000 years old and have mostly been found singly in Scotland. The most famous of the 400 or so discoveries is a beautiful polished black sphere from Towie, Aberdeenshire, with three bulbous surfaces, tactile as a miniature Henry Moore. The sphere is carved with precise geometric whorls and spirals. In common with the much weightier neolithic monuments that the Stonehenge exhibition celebrates, the longer you look at the stones, the more mysterious they seem: what and why and how?

If the answers to those questions remain unknowable, one thing that the balls – and the culture that prized them – make clear is their creators were people of enormous curiosity and skill, prepared to invest untold hours in making a perfect object, because they could. They were connoisseurs of stone.

I was thinking about the ancient magic of those finds, and their more spectacular counterparts, while driving across Salisbury Plain early one morning last week in the company of Neil Wilkin, the curator of the British Museum's World of Stonehenge show. With a trace of moon still evident, a thin mist lying in the valleys, and the morning light just beginning to ink in the curves of hills, this landscape can hardly have changed – the A303 and firing ranges apart – since the bluestone and sarsen boulders of the monument were first raised. The 300 sq miles of Salisbury Plain is the largest area of chalk grassland in northern Europe. Its rolling flatness and enormous skies demand some verticality, like the surface of the moon demanded a flag; Stonehenge is, among other things, a monument that gives a sharp sense of identity to the landscape around it.



*The Towie ball, 5,000 years old and as 'tactile as a miniature by Henry Moore'.*

It is, as images ingrained on our collective retina insist, also a place made for sunrise (probably, in terms of its celebrated alignment with the arc of the sun at winter and summer solstice, literally so). On the morning we visited, in common with more than one million mornings before, the silhouettes of the oldest stones came more alive in the light and glow of a wintry dawn, borrowing the pinks and golds of the horizon. In this period of managed access to the site, to be in among the megaliths, in the absence of tourist crowds, felt like a lifetime privilege; in the quiet of the breaking morning, the building feels as it must always have felt, like an awesome natural receptacle for the new day, a singular earthly welcome to the returning sun. It is designed to experience rather than to share: from within the double circle you can capture parts of the ruin, without ever getting the whole in your camera frame. “Why are there so many doors?” the writer John Fowles once heard a schoolboy ask. As the Stonehenge show will illuminate, those doors open up the time and space beyond the monument in multiple different ways.

One of those framings is a reminder that the building of Stonehenge was not a single event but a series of interventions in the site, beginning in 3000BC with the first earthworks and spanning 1,500 years – or 90 truncated human generations (each one marked with a painstakingly made axehead on one wall of the forthcoming British Museum show). Our visit to Wiltshire included that constellation of ancient sites that encircles the henge. The earthworks and settlements of nearby Durrington on the River Avon, the extraordinary stone circle and monumental ditch that runs through the centre of the village of Avebury, and the underground hilltop gravesite at West Kennet Long Barrow, approached over farmland. Most of the neolithic and bronze age treasures found by archaeologists and detectorists at such sites are housed in the two neighbouring museums\ - at Salisbury and Devizes (highlights of the newly marketed Great West Way tourist trail) – and it is from there that many of the prized objects have made their way to London.

The British Museum show is, remarkably, the first that it has devoted to this relatively local history. Mired as the museum is in repatriation arguments, it might seem timely and politic to have an exhibition devoted to this island’s insular prehistory. Except, of course, the story is not that simple.

“I imagine people may come in thinking that this is a show about England,” Wilkin says, “and then be surprised to find that, actually, to understand Stonehenge, you have to keep widening your focus.” For a start, there are the connections to the Preseli mountains of Pembrokeshire from where the bluestones of the original circle came, but Stonehenge further emerges as the hub of a complex network of links to Ireland and Scotland and northern Europe and the Alps.

Far from being a nativist emblem, the exhibition argues, the stones are best understood in the context of successive waves of immigration. First from the earliest hunter-gatherer tribes who migrated north across Doggerland, the “sea bridge” to the Kent coast – two extraordinary ancient stag-skull headdresses, about 11,000 years old, one from North Yorkshire, one from Germany, cement this connection. The DNA record shows how these tribes were supplanted in Britain by the first farmers, about 6,000 years ago, who came across the Channel, bringing with them seeds of cereal crops and domesticated cattle and sheep (and building the first stone circles). And then that gene pool is completely disrupted again 1,500 years later, when Beaker people, named for their distinctive pottery, arrived from central Europe, bringing



metal to Britain for the first time, entirely supplanting the people who built Stonehenge.

The Stonehenge exhibition will give a vivid shorthand story of all these shifting population movements, concentrating on those two millennia in which the first farmers on Salisbury Plain celebrated the sun and the seasons, culminating in that period in which precious metals allowed the worship of golden light to be more personal and portable. The final exhibit in the show is the delicate Shropshire sun pendant, discovered by a metal detectorist in 2018, that comes from the very end of the bronze age in 1000BC. It was probably made by an Irish smithy, reflecting continental European styles. The decoration retains solar symbolism, but now the sun is setting on that world.



*The Shropshire sun pendant.*

The show will also demonstrate how, like the mobile populations who have congregated at it for millennia, Stonehenge has never carried a settled meaning. In 1967, the archaeologist Jacquetta Hawkes wrote that “every age has the Stonehenge it deserves – or desires”. If the dominant postwar association was with druidic hedonism (Mrs Thatcher was having none of it: at the 1985 Battle of the Beanfield 537 new age travellers were arrested after clashing with Orgreave-hardened police over plans for a “free festival” among the stones), our own times tend to emphasise the environmental symbolism of the site (English Heritage live-streams the dark night skies above the stones direct to your laptop). Scientific advance has also changed Stonehenge. One new certainty is that Celtic druids, who appeared about 2,000 years after the stones were erected, played no part in the genesis of the monument whatsoever.

A Stonehenge exhibition is long overdue in London, Wilkin says, because the twin advances of radiocarbon dating and DNA analysis have revolutionised our

understanding of the societies that built these monuments. As a result, he says, with a far more nuanced understanding of surviving objects, “there is a whole new series of stories you can tell about a period of history of which we have been taught to believe we know very little”. For example, forensic geology of an exquisite jadeitite axe head quarried in northern Italy and left as an offering beside the Sweet Track, a wooden pathway built through reed beds on the Somerset Levels in 3807BC, tells a startling story, proving the movement of neolithic people over vast distances. DNA testing of grave remains, meanwhile, establishes specific family relations across generations, giving a new human intimacy to the oldest bones.

Some of the most recent work on the stones themselves by the archaeologist Mike Parker Pearson has identified exactly where in Wales Stonehenge’s oldest, smaller, bluestone circle originated. Parker Pearson last year located the spot on a hill called Waun Mawn, where, he believed, the stones, weighing between two and five tonnes, were positioned in a great circle – perhaps for centuries “acquiring holiness” – before being transported the 140 miles to Wiltshire. In a book published to coincide with the exhibition, *How to Build Stonehenge*, the neolithic expert and *British Archaeology* magazine editor, Mike Pitts, documents the likely route by sea – navigating the Welsh coast and River Severn estuary – and river and land by which the bluestones most likely travelled. Pitts also surveys the latest work on the methods by which the great post-glacial sarsen megaliths with their unique lintels were hauled from the Marlborough downs, and raised in place. The largest stones weigh 30 tonnes and stand 7m tall – the new research argues that most were transported from a site 20 miles north of Stonehenge and probably moved not on rollers as was previously believed, but on enormous sledges across logs laid as rails. To shape and dress the stones would itself have been a labour of hundreds of thousands of man hours.

Stonehenge was bought as recently as 1915 by a local barrister, Cecil Chubb, for £6,600, as a present for his wife

One conclusion of his book is that the technology, if not the manpower, used to create the henge did not appear from nowhere. There were many wooden structures of a comparable design across Britain and beyond. The British Museum show will include part of the outer ring of the miraculously preserved Seahenge, a contemporaneous timber circle with a great upended oak tree at its centre, roots turned to the heavens. The Seahenge had been preserved in peat and sand in north Norfolk, until it was exposed by rising sea levels in 1998, its 4,000-year-old bark still intact.

A closer understanding of the lives of the people who built the henges, and who moved these great stones, suggests a high level of commonality and shared purpose. The skeletons found in the burial sites near the Wiltshire monument show comparatively little evidence of violence. Wilkin suggests that “the act of building was perhaps as important as the building itself”. Not far from Stonehenge is [Silbury Hill](#), the largest manmade structure in Europe in 2400BC, and of similar height and volume to the roughly contemporary pyramids in Egypt. Excavation shows no tomb beneath the great mound, however. The latest theories suggest that its construction, over several generations, was a community endeavour, perhaps a collective rite of passage, a great monument to pastoral co-operation. The sarsen uprights of

Stonehenge, and the long avenue that approached them, appear to have been constructed as this kind of society, with its deification of stone, was first beginning to come under threat.



*The neolithic mound of Silbury Hill in Wiltshire.*

The discovery of the grave of the “[Amesbury Archer](#)” when the foundations of a new primary school were dug in 2002 in a village three miles from Stonehenge is early evidence of this great technological and social shift. The man, who was in middle age, died 4,350 years ago and was buried with numerous objects that included five Beaker pots, three copper knives, a pair of gold hair ornaments, a small anvil used in metalworking and 122 pieces of worked flint, including the arrowheads that gave him his nickname.

When the grave was first discovered the tabloids christened him the “king of Stonehenge” but the truth of the mix of grave relics makes him even more fascinating. While the pots are in the new Beaker style that originated in continental Europe, they were likely to have been manufactured locally. By contrast, the gold ornaments are made in a British style but from metal that was probably from mainland Europe. Examination of the isotopic composition of the man’s teeth suggested that the Amesbury Archer had grown up in the western Alps before travelling to Britain later in life. Piecing these bits of information together, archaeologists conclude that this man was among the very first to bring the magical knowledge of how to manufacture copper to Britain, which perhaps guaranteed him such a high-status burial; DNA analysis of a companion grave nearby show it to be that of the man’s great grandson, who had been born in Wiltshire but spent part of his life abroad.





*The Nebra Sky Disc, 3,600 years old and the first-known metallic depiction of the cosmos.*

In the centuries that followed, such individual graves became more common, in contrast to the collective burial sites of the earlier period. The appearance of metal objects, including gold, in these graves seems to coincide, the exhibition suggests, with new social networks and trading routes related to the ever-increasing demand for metal. The implication of single-occupancy graves was mirrored above ground where farmland becomes enclosed. Stonehenge continued in this period as a significant and perhaps sacred site, with burial mounds constructed all around it, but the implications of the new detailed DNA and dating advances are that the collective agrarian spirit that enabled it gave way to a more modern sense of individuality and selfhood and ownership. (The idea of Stonehenge as “property” persisted – it was bought as recently as 1915 by a locally born barrister, Cecil Chubb, for £6,600, as a present for his wife. Three years later, he handed it back to the nation in exchange for a baronetcy.)

“We talk about connectivity a lot,” Wilkin says, “but I think what’s different about it here is that we’re using those connections to explain some of the real fundamental changes that happened in this period of European history: the rise of individualism,

the introduction of farming, the settlement of the lands and enclosure in the middle bronze age which eventually seems to have led to greater conflict and warfare.”

In between these times there is a long period of competing traditions in which marvellous metal objects were made to celebrate and explain the movement of sun and stars as the great stones had once perhaps done. The earliest such object in the world, the Nebra Sky Disc, an exceptional loan to the British Museum from the Halle State Museum of Prehistory in Germany, probably dates from about 1550BC. Its gold relief against a dark night sky background is the first-known metallic depiction of the cosmos. More than that, though, its genesis reflects a Europe of constantly shifting and mixing populations: it is made of Cornish tin and gold and incorporates astronomical knowledge from Scandinavia, the Mediterranean and Egypt. Ideas that were once set in stone are now free to travel.

- [The World of Stonehenge is at the British Museum, London, 17 February-17 July](#)