

Stonehenge study upends a 100-year-old theory and suggests further discoveries to come

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A team led by researchers at the Department of Geography and Earth Sciences, Aberystwyth University, UK, has discovered a secret about

Stonehenge stone 80, also known as the "Altar Stone," suggesting it did not come from the same source as other stones used in the construction. Many of the smaller stones are believed to be derived from a source 140 miles away from Stonehenge, but the Altar Stone is different and may be from a quarry much further away.

In a paper, "The Stonehenge Altar Stone was probably not sourced from the Old Red Sandstone of the Anglo-Welsh Basin: Time to broaden our geographic and stratigraphic horizons?," published in the *Journal of Archaeological Science*, the research team details how newly acquired information is overturning a hundred-year-old theory.

The Altar Stone at Stonehenge is a unique [stone](#) among the bluestones of Stonehenge due to its sandstone composition, which contrasts with the predominantly igneous bluestones forming the inner circle of Stonehenge. Bluestone refers to the smaller stones at Stonehenge, which have a bluish hue when wet.

Previous theories suggested that the Altar Stone originated from the Old Red Sandstone formation of west Wales, similar to the other bluestones primarily from the Mynydd Preseli area in west Wales.

The Old Red Sandstone formation was created around 400 million years ago when what is today Europe and North America collided. Portions of the formation can be found on both sides of the Atlantic and as far north as Greenland and Norway.

To investigate the origin of the Altar Stone, the researchers conducted various analyses, including optical petrography, portable XRF analysis, automated SEM-EDS analysis, and Raman Spectroscopy on samples from the Old Red Sandstone formation within the Anglo-Welsh Basin. One significant characteristic of the Altar Stone is its high barium content, distinguishing it from most other basin and bluestone samples.

The findings indicate that the Altar Stone's barium content is unusual. While a few basin formation samples match its composition, they are discounted as being from the same source as the Altar Stone due to contrasting mineralogies. This raises doubts about the Altar Stone's origin in the Anglo-Welsh Basin, suggesting the need to broaden the search geographically and stratigraphically into northern Britain and consider searching for sandstones of a younger age.

The bluestones, predominantly of igneous origin, were originally called "Foreign Stones" by early excavators at Stonehenge because they were unlike the more considerable and locally sourced sarsen stones. The local source for the large stones used in construction is thought to have come from a distance of 15 miles away, which, at upwards of 55 metric tons per stone, is still quite a remarkable undertaking and suggests a deep significance to the location where they were transported.

The majority of the bluestones have been sourced to the Mynydd Preseli area in west Wales, 140 miles west of Stonehenge, which represents one of the longest transport distances known from source to monument construction site anywhere in the world.

The researchers propose that based on their study, the Altar Stone should be "de-classified" as a bluestone, breaking the link to the Mynydd Preseli-derived bluestones of Stonehenge. If correct, the search for the Altar Stone's origin has just begun.

What is the meaning of Stonehenge?

While many astronomical theories have been proposed and debunked over the years, the one aspect confirmed by archaeology is that over the course of 5,000 years, the structure has had many adopted significances. A place to bury the dead, a place to seek sacred healing, a place for contemplation, and if there is a local tradition, druidic or otherwise, it

would only be logical to incorporate the monument into gatherings.

Rituals of all sorts have no doubt taken place amidst the stones, not the least of which is the modern tourist rite of taking selfies. Whatever the original intent, the legacy of Stonehenge is in the endless sense of wonder, mystery, imagination and vacation snapshots it provides.

More information: Richard E. Bevins et al, The Stonehenge Altar Stone was probably not sourced from the Old Red Sandstone of the Anglo-Welsh Basin: Time to broaden our geographic and stratigraphic horizons?, *Journal of Archaeological Science: Reports* (2023). [DOI: 10.1016/j.jasrep.2023.104215](https://doi.org/10.1016/j.jasrep.2023.104215)

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