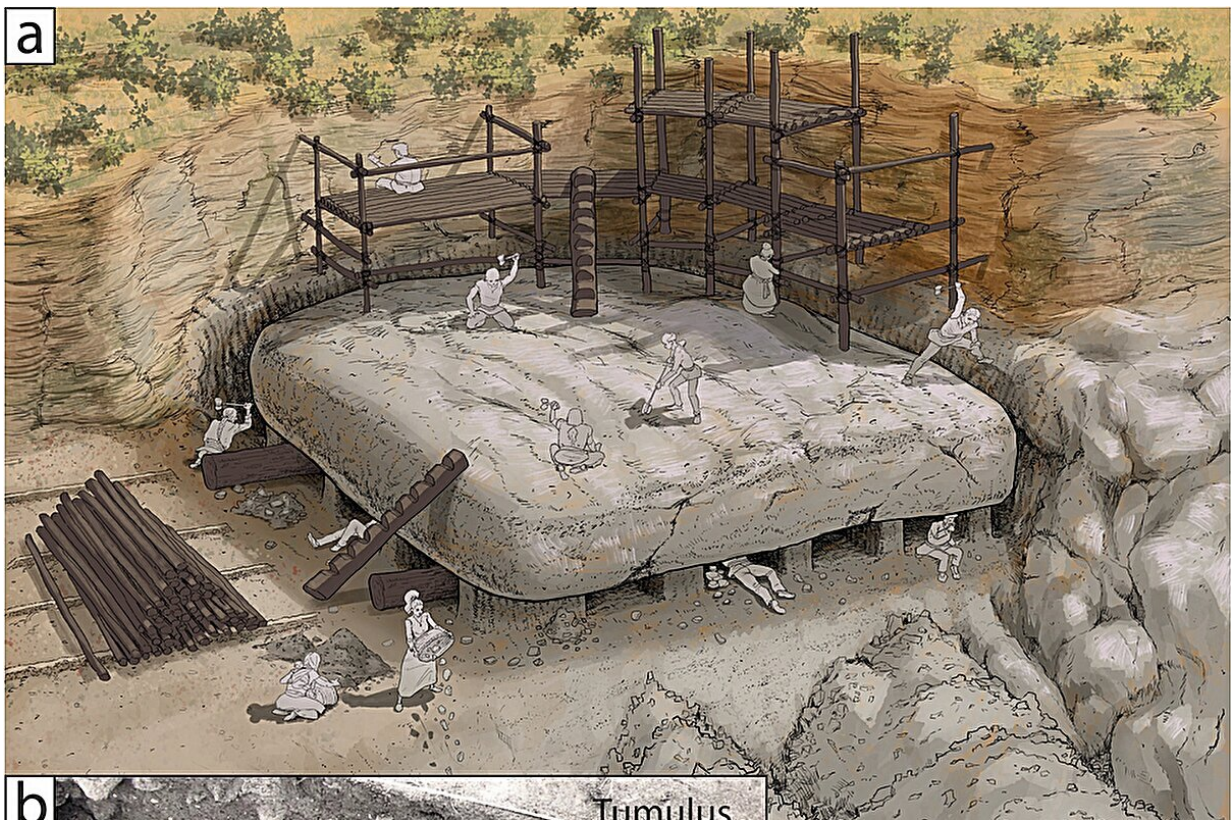


Closer look at the Menga dolmen shows it was one of the greatest engineering feats of the Neolithic

December 5 2023, by Bob Yirka



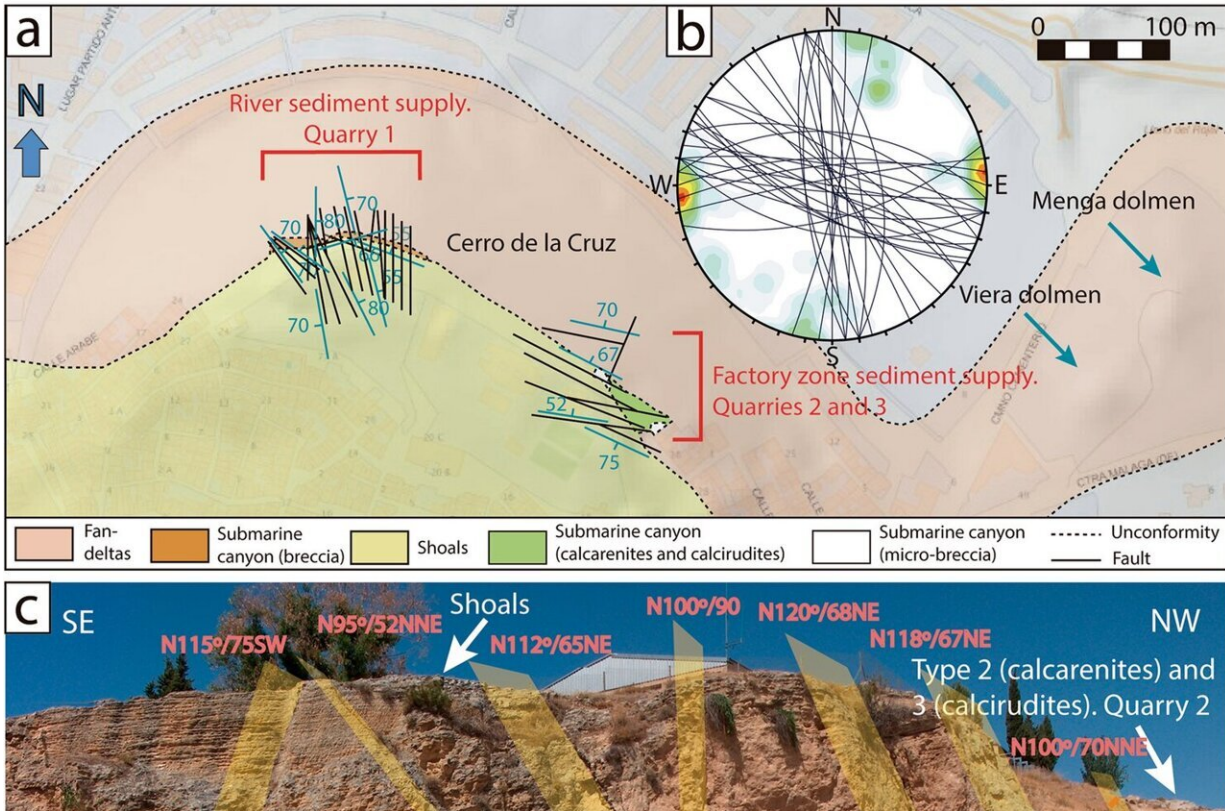
(a) Artistic representation of quarrying activities for the extraction of the capstone C-5 in Cerro de la Cruz Quarry #2. Drawing: Moisés Bellilty under guidance of José Antonio Lozano Rodríguez and Leonardo García Sanjuán. (b) Aspect of the thickness and shape of the C-5 capstone, the support on part of the O-10 orthostat and the tumular structure. University of Malaga excavation. Ferrer-Marqués, 1984. Conjunto Arqueológico Dólmenes de Antequera. (c) Convex

morphology of the top of the C-5 capstone and the thickness of the tumular structure. University of Malaga excavation. Ferrer-Marqués, 1984. Conjunto Arqueológico Dólmenes de Antequera. Credit: *Scientific Reports* (2023). DOI: 10.1038/s41598-023-47423-y

A team of archaeologists, geologists and historians affiliated with several institutions in Spain has found that the Menga dolmen represents one of the greatest engineering feats of the Neolithic. In their study, [published](#) in *Scientific Reports*, the group used new technology to learn more about the stone that was used to create the ancient burial site and to explore how wood and rope would have been used in its construction.

The Menga dolmen is an ancient burial mound located near Antequera, Málaga, Spain. It has been dated to approximately 5,700 years ago and is one of the largest known megalithic structures to be built in Europe. It was built into the top of a hill using large stones, the largest of which weigh more than 100 tons. In this new effort, the research team took a closer look at the composition of the stones used to build the [burial mound](#), where they came from and how they were transported.

To learn more about the makeup of the stones, the research team used petrographic and stratigraphic analysis techniques, which showed that the stones were mostly calcarenites, a type of detrital sedimentary rock. In the modern age, they are known as soft stones due to their fragility. According to the researchers, such a soft type of rock would have been difficult to transport without causing damage—a finding that suggests a certain level of engineering sophistication.



(a) Geological map of tectonic jointing on DTM, showing the location of Menga and Viera and the likely quarrying areas at Cerro de la Cruz. (b) Stereographic representation of the groups of joints. (c) Overview of the tectonic fracturing present in quarry areas #2 and #3. (d) Groups of joints observed in Quarry #1. (e) Example of a possible discarded megalithic stone at Quarry #1. Credit: *Scientific Reports* (2023). DOI: 10.1038/s41598-023-47423-y

Moving and placing such large stones, they state, would have involved massive planning and engineering, particularly for the capstone, which, as its name implies, was laid across the top of the chamber to serve as a roof. The researchers say it weighs approximately 150 tons. They point out that placing such large rocks would have involved the use of scaffolds and ropes, and transporting them would have required level roads.

The research team also states that the [burial ground](#) was built in such a way as to point in a desired direction. Its position aligns with nearby mountains in a way that creates complex light patterns inside the chamber. They also found that the early engineers had devised a way to place stones at the edges of the burial chamber in interlocking fashion to channel away water seepage as a means of preventing erosion.

More information: José Antonio Lozano Rodríguez et al, The provenance of the stones in the Menga dolmen reveals one of the greatest engineering feats of the Neolithic, *Scientific Reports* (2023). [DOI: 10.1038/s41598-023-47423-y](https://doi.org/10.1038/s41598-023-47423-y)

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