

Famous Bronze Age Rock Sanctuary Interpreted as a Lunisolar Calendar

The artistically carved figures in Yazılıkaya, one of the holiest places of the ancient Hittite culture (ca. 1600–1190 BC), in today's central Turkey, apparently served as a device to establish a calendar. It turns out that the religions of Bronze Age cultures in the eastern Mediterranean were more oriented toward the sun, the moon, and the stars than previously thought.

Zurich, Switzerland, 19 June 2019 – The rock sanctuary of Yazılıkaya in central Asia Minor consists of a limestone outcrop with two inner courts in which more than 90 figures were carved in stone around 1230 BC. It is one of the most fascinating archaeological sites in the world and as such a UNESCO World Heritage Site. An interdisciplinary team of Swiss archaeologists and natural scientists has now discovered that Yazılıkaya could have functioned perfectly as a system to establish and maintain a lunisolar calendar – it can even be used this way today. The Zurich-based geoarchaeologist Eberhard Zangger, president of the Luwian Studies foundation, and Rita Gautschi, archaeologist and astronomer at the Institute of Archeology at the University of Basel, will publish the results of their study on the upcoming summer solstice (21 June) in the *Journal of Skyscape Archeology*. The peer-reviewed open access publication is available for free download at <https://luwianstudies.academia.edu/EZangger>.

Yazılıkaya has been known to European scholars since 1834 and has attracted a great deal of public interest since its discovery by the French traveler Charles Texier. To date, however, no satisfactory explanation for the actual function of the complex could be found.

The Swiss researchers argue that the sanctuary and its rock-carved figures and temples were a place where the sun, moon, and planets were observed, and where priests probably also kept records of sky movements and archived their notes. Above all, symbol counts indicate that the site was used as a place where the calendar was kept. Twelve identical figures marking the lunar months occur twice in the complex. The maximum number of 30 days in a lunar month is also depicted in the figures in Chamber A of the sanctuary. Many of the deities bear inscriptions in Luwian hieroglyphic.

The years, too, find their expression in the rock chamber – in the form of 19 uniform female deities. A period of 19 years was one possibility to reconcile the lunar months with the solar years and thus to keep a true calendar. Over the course of 19 solar years, 7 additional lunar months had to be intercalated, so that for two or three years with 12 lunar months, one followed with 13.

A functioning calendar was indispensable to the Hittites. It determined the timing of sowing and harvesting, but above all the dates of up to 165 annual religious festivals. In addition, the royal family relied on astrological predictions. It had to be known in advance, for example,

when a lunar eclipse was to be expected, since it was believed at that time that the king's life might otherwise be in danger.

The researchers Zangger and Gautschy also provide a number of arguments showing that the sun, the moon, and the stars played a significant role in Hittite religion. The outer walls of the temple buildings at Yazılıkaya were specifically aligned toward the sunsets during the summer and winter solstices. The relief of the great king Tudhaliya IV only captures sunrays during the days around summer solstice. The effects of light and shadow in the complex are unique, and have apparently been carefully reinforced. The temples, city gates, and chambers in the Hittite capital of Hattuša, to which Yazılıkaya belongs, were also aligned according to celestial parameters.

Almost 120 years ago, the first excavator of Hattuša, the ancient orientalist Hugo Winckler from Berlin, sparked off a momentous scholarly dispute when he published his ideas on the astral orientation of the early civilizations in the Near and Middle East. For several generations, scholars avoided follow up on the subject. Finally, after the year 2000, scholarly articles appeared arguing that the sun and the moon had a particular significance in the Hittite religion – and probably in the religions of other cultures of the 2nd millennium BC.

Further information:

<https://luwianstudies.org/de/>

Lecture on the subject:

<https://youtu.be/QuRXHL8Hctk>

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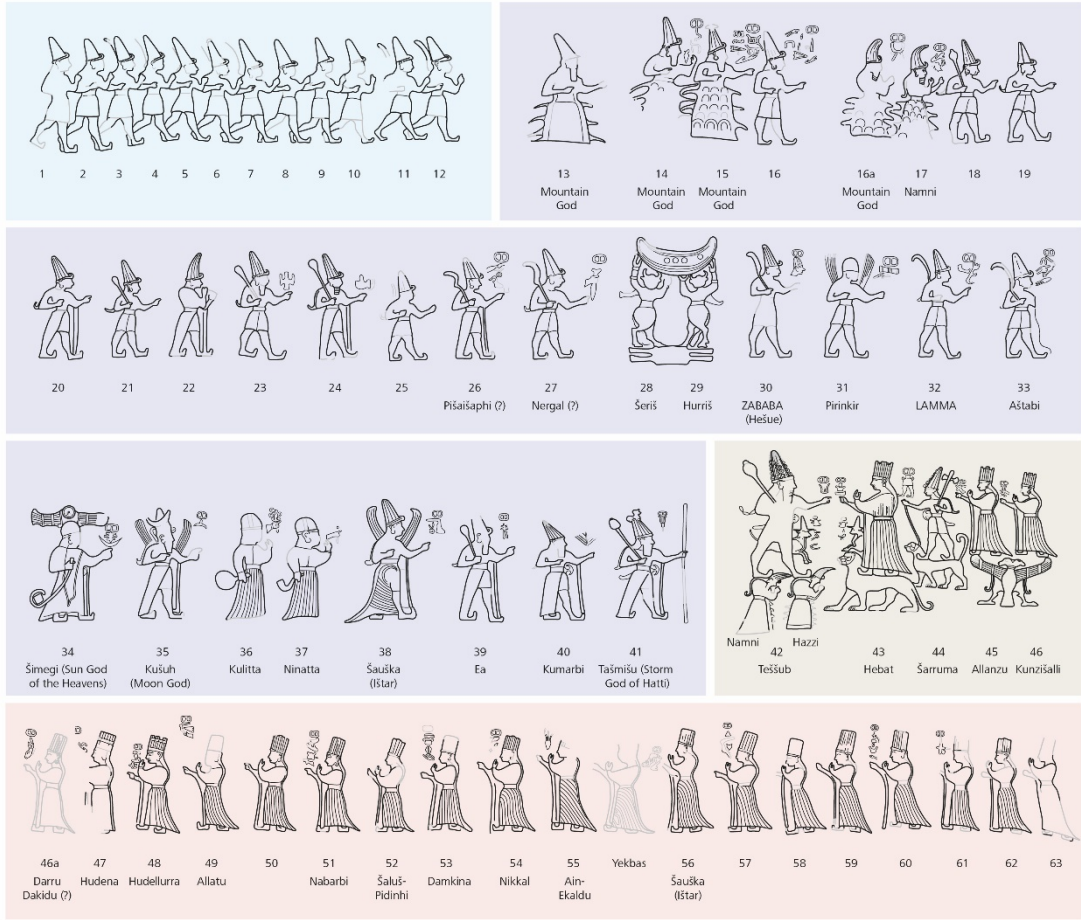
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The rock-carved reliefs in Chamber A of the Yazılıkaya sanctuary are arranged in groups: 12 lunar months, 30 lunar months, 5 members of the climactic group, and 19 female deities indicating the years. The direction of counting was opposite to the direction of the figures.