

# BOOK OF ABSTRACT

## SESSION III (S3)

ARCHEOASTRONOMY AND CULTURAL ASTRONOMY  
IN THE REST OF THE WORLD



**SKYSCAPES**  
IN THE SUN ISLAND

XXXI SEAC MEETING

SICILY • 12-17 NOVEMBER 2024

CATANIA | AGRIGENTO | LICATA

# The INGÁ stone: an archaeological monument of the original people of Brazil to map the sky and turn it into a calendar

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*keywords:* Ingá Stone; archaeoastronomy; Itacoatiara; Science education.

## ABSTRACT

Located in the municipality of Ingá, in the State of Paraíba, Brazil (lat 7° 19' 30.2" S; long 35° 35' 6.8" W), Ingá stone is a spectacular remnant of South American archaeoastronomy: a river rock (temporary or intermittent river) in the Brazilian hinterland, approximately 3 meters high and 50 meters long. It is an Itacoatiara, an indigenous word that means "written in stone".

*Pedra do Ingá* (Cézar, 2013; Neves, 2023), as it is known, has hundreds of inscriptions indicating stars, sun, fruits, anthropomorphic figures and spirals. The figures represent the local fauna and flora, but are intermediated by a long line with around 160 rounded holes, which possibly represent the apparent trajectory of the Sun throughout the four seasons. There is also a series of star's itacoatiaras and the most representative is one made up of three aligned stars, probably the "Três Marias" (Orion's belt – Museu, 2018). The present work represents an archaeoastronomical view of the archaeological site, integrating a calendar and a map of the sky, representing the rainy and dry seasons present in that semi-arid region of Brazil. The work seeks to refute unscientific theories that the monument was created by people coming from the northern hemisphere and without astronomical connotations. An effort will also be presented to identify indigenous constellations and their representation in sessions at the Planetarium "Circus Stellarium" at the State University of Maringá, to rescue the astronomical science of the original peoples of Latin America.

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# Cosmological Relations in the Muisca Myth of Bachue

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*keywords:* Bachue myth; cosmology; Iguaque; Milky Way; Muisca; serpents

## ABSTRACT

This research presentation outlines possible cosmological relations in the Muisca myth of Bachue, a traditional narrative that relates the origins of humanity and involves a woman and a child, two serpents and the sacred lake of Iguaque located in the northern Andes. The Muisca is the name given to the indigenous peoples found in central Colombia by the Spanish conquerors. The research applied an interdisciplinary approach, considering archaeological, historical, ethnographic, astronomical, social and climatic perspectives.

The analysis focused on the iconography and forms of archaeological artifacts associated with the myth: cups, múcuras and tunjos. An animal with a long, wavy body, and the “humped animal” motif, stand out. Historical sources highlight the figure of a large animal with a curved back and associate it with mountain lakes. From El Infiernito archaeological site one can observe the Iguaque massif on the eastern landscape. Between 700 AD and 1000 AD (which synchronizes with the potential emergence of the first serpent-adorned cups, and, consequently, the origins of the myth), there were celestial and landscape alignments involving the Sun, the Milky Way and the Pleiades. These astronomical phenomena coincide with seasonal change.

It was observed that the design of the “humped animal” shares certain characteristics with the naked-eye view of the Milky Way. It is suggested that the Muisca may have perceived the Milky Way as a colossal and curvaceous creature, with its bulge being the animal’s arched back. Additionally, the position on the horizon for the heliacal rise of the Pleiades aligns with the lake’s location. This suggests that this asterism could have served as a fertility pre-solstice indicator. The Muisca serpent-adorned cups can be interpreted as a representation of a cosmogonic/cosmological model, with concepts such as origin, opposition, duality, water and death, all present in the myth, materialized in these unique ceramic pieces.

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# Eflatun Pinar vs. Yazılıkaya: Vertical and Horizontal Hittite Celestial Orders

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*keywords:* Hittite religion, cosmovision, Eflatun Pinar, Yazılıkaya

## ABSTRACT

The Hittite spring sanctuary of Eflatun Pinar is located 70 km west of Konya, a few kilometers east of Lake Beyşehir. It was probably built during the reign of Tudhaliya IV (ca. 1240–1215 BC), which would be at the same time as the last revision of the rock sanctuary Yazılıkaya near Hattusa. The first Western scholar to see the monument was William John Hamilton in 1837. The monument consists of a 7 m wide, and 4.2 m high façade made of individual sculptured stone blocks that tower on the north side over a dammed spring basin measuring 30 × 34 m. Reliefs of five mountain gods form the bottom row of the weathered figures. In the middle of the façade is a pair of gods with unclear identities. They are flanked by hybrid creatures.

The whole ensemble supports two smaller winged sun discs and another winged sun disc across the entire width of the façade. Using the methods of comparative archaeology, the composition of the depictions of the gods in Eflatun Pinar is compared to the latest cosmological interpretation of Yazılıkaya. In Yazılıkaya, the hierarchy of deities is expressed in a horizontal, north-facing arrangement. In Eflatun Pinar, the vertical arrangement reflects the hierarchy. While the reliefs in Yazılıkaya were carved into the bedrock, in Eflatun Pinar, hewn natural stones were erected. In Yazılıkaya, many figures bear legends in Luwian hieroglyphs, whereas Eflatun Pinar is script-less.

Both depictions of gods are representations of the cosmos and its static horizons. In Eflatun Pinar, the underworld falls below the lake surface. The mountain gods correspond with the earth. The clear division of the sky into two different horizons, symbolized by the differently sized winged sun discs, stands out. Eflatun Pinar offers a simplified and more abstract depiction of the Hittite view of the cosmos and shows how it is entirely animated by deities. In Yazılıkaya, the same cosmovision is elaborated in more detail and even labeled in part but lacks the vertical hierarchical arrangement and abstract graphic explicitness that is preserved in Eflatun Pinar.

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