

BOOK OF ABSTRACT

SESSION II (S2)

ARCHEOASTRONOMY AND SKYSCAPE IN CONTINENTAL EUROPE AND
IN THE MEDITERRANEAN: FROM PREHISTORY TO ROMAN PERIOD



SKYSCAPES
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The sky above the Neanderthals: do we know anything about it?

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keywords: Neanderthals, cultural abilities, navigation, sky, worldview

ABSTRACT

Recent research indicates that Neanderthals had significant knowledge of the world, survival techniques, and artistic abilities. Whether the sky and its phenomena were also important to them arises.

An analysis and evaluation of the findings show that Neanderthals aligned dwellings, burials, and ritual objects to sky phenomena. Neanderthals had expertise in navigation over long distances, including in mountainous regions, indicating familiarity with the skies. The sun and celestial circumpolar area played a prominent role in this. Neanderthals possessed specific proto-mathematical skills that could have helped them observe the sky.

Evidence suggests they may have travelled by sea, possibly utilizing celestial knowledge for navigation. Sparse archaeological findings and myth reconstructions hint at the existence of Neanderthal narratives about the world.

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Semantic analysis of astronomical signs and symbols in the Magura prehistoric pictographic complex (Rabisha village, Bulgaria)

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keywords: Magura cave, prehistoric drawings, monochrome painting, solar calendar, astronomical signs

ABSTRACT

The Magura cave is located near Rabisha lake, Rabisha village, Belogradchik municipality. Monochrome prehistoric drawings painted with bat guano found in one of the cave's galleries are of great scientific interest. In 1984, the cave with the drawings and the lake were included in the Tentative List of UNESCO World Heritage Sites. They are a little over 1000, multi-layered and from different periods, with different execution techniques (guano, ocher, graffiti).

One of the most impressive drawing rooms in the Magura cave is the Solar Hall because it depicts an annual solar calendar from the Late Eneolithic, with additions from the Bronze Age (Stoytchev, Gerassimova, 1994). By a scheme for dividing the paintings into groups a calendar within the tropical year is read from the so called "solar group" of paintings (Maglova, Stoev, Spasova, 2020). Time periods smaller than a month were reflected in the groups of graphic signs, as well as a chronological sequence of significant astronomical events (solstices and equinoxes, phases of the Moon) and introduction of intercalary days (Spasova, Maglova, Stoev, 2023).

This report presents a semantic analysis of astronomical signs and symbols related in storylines to calendrical records and cultic ceremonies and rites. The main elements of astronomical symbolism, which are the compositional and semantic center of the pictographic groups, are separated. A connection is made between the astronomical signs and classical geometric forms, as well as their place in the general arrangement of the pictographic record. To the already noted solar symbolism of the circle and the cross, we must add the triangle, the parallelepiped, the polygon, the ellipse, etc., whose sacred and aesthetic qualities as geometric figures have been known since prehistoric times. An attempt has been made to identify some of the astronomical images with the real prototypes on the celestial sphere.

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To see or to be seen: key cosmological principles in the Maltese Temple Period

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keywords: Landscape archaeology, Inter-visibility, Horizon, Temple Orientation, Cosmology.

ABSTRACT

It can be argued that the Late Neolithic megalithic monuments in Malta, today generally accepted as **Temples**, are the oldest freestanding megalithic structures in the world. Recent archaeological findings suggest that the first colonizers to the Maltese archipelago came from Sicily around 6,000 BCE (McLaughlin et al. 2020). These first immigrants seem to have abandoned the archipelago, and then later resettled it, apparently probably due to climatically circumstances (Grima et al. 2020: 234). However, the unique Maltese Temple Period goes from 3,800 to 2,400 BCE and is divided into two core periods; the Ġgantija Period (3,800-3,100 BCE), and the Tarxien Period (3,100-2,400). This presentation will look at how the choice of temples' location and their orientation reflected their builders' worldview and belief system, their cosmology (Lomsdalen, T., 2022).

This is done with a methodology that combines landscape archaeology, horizon astronomy, skyscape archaeology, field observations and statistical analysis. Results illustrate that the temples were positioned in the most inherently visible part of the landscape and were not arbitrarily located. In addition, it is observed that temple orientations were not randomly chosen by their builders. The viewscape through the temple entrances displays stellar alignments towards Gacrux, the top star in the Southern Cross constellation, and Avior, the bottom star in the False Cross asterism. This research also suggests that, in the Ġgantija Phase (3,800-2,800 BCE), society was more stellar oriented whereas, in the subsequent Tarxien Phase (2,800-2,400 BCE) this seems to have been lost, and the sun starts to gain prominence. The cyclicity of these two stars may have been a seasonal indicator for timing of initiation rites and/or life sustainable agriculture, and could together with other stars have been a seafaring navigation from Sicily to Malta (Lomsdalen, T., 2013).

This presentation shall manifest these arguments through the concepts of viewsapes and cosmology, based on Geographical Information System (GIS), astronomical software, field observations and statistical analysis.

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Heraia: Seasonality and Skyscape at the Temples of Hera in South of Italy

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keywords: Skyscape, Doric Temples, Magna Graecia, Festivities

ABSTRACT

In South of Italy, the three extra-urban temples dedicated to Hera (Heraion of Foce Sele at Poseidonia, Heraion of Tavole Palatine at Metapontion, Heraion of Capo Colonna at Kroton), placed at hundreds of kilometers apart from each other, are oriented in a precise arc of the horizon (95° azimuth $\pm 2^\circ$) (Iannelli 2020). The orientations of these three temples are considered for analyzing the season of a possible common religious festival dedicated to Hera. In the context of Greek religion, a 'festival' was defined as a recurrent day, or a sequence of days, during which precise ritual actions were performed to worship one or more gods/goddesses at a precise sanctuary (Chaniotis 2011). The methodology starts from the topographical surveys (UAV LiDAR and photogrammetric RTK Survey), followed by the elaboration of data in combination with astronomical databases (Zotti et al 2021). The day of the year when the sun was seen rising aligned to the temples at the epoch of their foundation is then calculated, which is at the time of the equinoxes (spring and fall).

A final contextualization of the results is placed within Gregory Nagy's interpretation of Hera as the goddess of timeliness and seasons, 'in charge of making everything happen on time, happen in season, and happen in a timely way' (Nagy 2020, 30, 307). In this way, Hera also became the patron goddess of rituals of passage, such as from the parthenia of young virgins to become nymphe, brides, wives, and mothers of citizens, according to an equinox festival which would fully integrate them within the civic community. This project has been funded by CNR-ISPC within the project Casa delle Tecnologie Emergenti di Matera, with courtesy of the Archaeological Park of Paestum and Velia – Italian Ministry of Culture.

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Light and Stars in the Sanctuaries of Ancient Peloponnese

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keywords: Ancient Greece, Ancient religion, Temple orientation

ABSTRACT

Graeco-Roman civilizations have documented celestial phenomena in various records. However, their connection to cultural practices remains inadequately investigated, particularly in architectural, iconographic, and literary contexts not explicitly centered on sky observations.

References to astronomical phenomena in ancient literature passages such as the Homeric epics, suggest the potential for archaeoastronomical investigation into the Archaic and Classical periods of ancient Greece. For instance, this study implies that prior to the Homeric era, celestial navigation likely played a role in Mediterranean voyages.

In this perspective, we investigate the relationship between astronomical knowledge and rituals by comparing social behavior and religious practices at the sanctuaries of Artemis Orthia in Sparta and of Despoina in Lykosoura, ancient Arcadia. This analysis highlights the potential for archaeoastronomical evidence to elucidate some aspects of the sacred rituals described in literary and epigraphic sources. In particular, in the sanctuary of Despoina, we can discern a strong connection with the equinoxes. From contextual considerations, this suggests a temporal setting at the beginning of spring for the local sacred teletai, the initiatic ceremonies in honor of the goddesses Despoina and her mother Demeter.

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On the Orientation of Early Christian Churches in the Aegean Islands

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keywords: Early Christian Basilicas, Aegean Islands, Dodecanese, Cyclades, Orientation

ABSTRACT

The present study examines the orientation of early churches in the Aegean Islands by remote methods; about 200 were located and measured. Almost all the churches are basilicas and the vast majority of them have three aisles. In many cases, the sacred function continues to this date, with successive newer churches built on top of old ones, occasionally well into the 20th c.

The early Christian basilicas in our study date from the mid-4th to the early-9th c., with the majority of them from the 6th c. The preliminary results show that the churches have a pronounced and significant peak centered to east and fall-off rather symmetrically on the sides.

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Rising at the Horizon of the Sky: the C2 paradigm at Thebes

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keywords: Ancient Egypt, horizon, winter solstice, landscape, skyscape, alignments, C2 Project.

ABSTRACT



'He made these great and perfect monuments for all eternity. He knew how to orientate them towards the Horizon of the Sky'

This inscription can be read on the walls of the temple built by King Ramesses II at Abu Simbel dedicated to the most important gods of ancient Egypt. As the inscription reads, the king had orientated it to the Horizon of the Sky (Akhet en Pet), the Horizon being a most important section of Egyptian skies where celestial spirits (akh) were transformed either when setting or, better, at rising. It was already mentioned in the Pyramid Texts of the Old Kingdom (Belmonte and Lull, 2023). At some stage on the development of Egyptian hieroglyphs, the akhet changed the spelling from an akh-bird plus phonetic complements, to a sun rising between two mountains (dju) as in the previous inscriptions. We do not know exactly when this happened and it is being the object of investigation. The symbolism was so important that ancient Egyptians built landscapes in an attempt to reproduce this phenomenology, as perhaps in the Giza plateau, or assume this as clear aspects of their worldview when the Sphinx assumed the character of Hor-em-akhet (Horus at the Horizon). In other cases, they look for natural spaces with a peculiar orography so that nature can recreate the same phenomenon. The city of Akhenaton at modern Tell el Amarna, called the Horizon of the (solar) Disk ((Akhetaten) would be a nice example of this (Belmonte et al. 2009). On occasions, these aspects were combined with important milestones either of the tropic year, notably the winter solstice (Belmonte and Urrutia-Aparicio, 2023), or relevant dates of Egyptian civil calendar. A re-interpretation of the location and orientation of the temples built by King Mentuhotep II and She-King Hatshepsut at Deir el Bahari are epitomes of this reality and exemplify an outstanding connection between land-, skyscape, time keeping and architecture (Belmonte et al. 2020).

Precisely next to the Deir el Bahari Bay and adjacent to it, there is one of the most fascinating, valuable but less known sacred places of ancient Egypt. This is the Royal Cache Wadi, or C2 in Theban nomenclature. This is the place where dozens of mummies of Kings and Queens of Egyptian New Kingdom were found at the end of the 19th Century by a famous family of tombs 'robbers' who were exploiting their finding until the plot was discovered by the officials of the Antiquities Service. Immediately, the tomb content was urgently emptied and the royal bodies sent to Cairo where they reside now in the recently created Museum of the Egyptian Civilization. The hypogeum was not scientifically excavated and, consequently, we do not even know today who was the original owner of the 'cache', which actually was at plain view of Egyptian priests and scribes for centuries, as the hundreds of graffiti in the neighborhood demonstrate. C2 has been the objective of a Spanish-Egyptian Archaeological Mission (the C2 Project, Pérez Accino and El-Leithy, 2023; the first author being the PI of the Project) for the last decade in an attempt to clarify the many doubts surrounding this important site of rude beauty and inextricable mysteries.

The multidisciplinary team of the project includes Egyptologists of the most diverse specialties. From

the onset of the project, the PI noticed the suggestive orography of the site, with a wadi going down from the scarps of the Qorn, the peculiar mountain dominating the Theban necropolis. The valley ended, as seen from a huge, perhaps unfinished or deliberately destroyed, niche excavated in the hard limestone of the cliffs, in a peculiar topographic feature resembling a valley within two hills (a 'dju' sign). This orographic feature permitted an open view of the eastern horizon above the hazes of the Nile Valley. Interestingly, exactly in the middle of the feature, the sun rises (and rose) at the winter solstice, forming an astonishing view of indescribable beauty, reproducing an akhet at a gigantic scale. In this presentation, we will briefly describe the epigraphic findings and shall discuss a few of the project archaeological findings in an attempt to contextualize what we believe was a site of important rituals centuries before that the royal mummies were translated to a well-known 'cache'. The skyscape certainly played a most relevant role in this phenomenology.

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The Orientation of New Megalithic Monuments in Southern Iberia

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keywords: Megalithism; Orientation; Landscape Archaeology; Iberia; Andalusia.

ABSTRACT

The orientation of megalithic monuments has been traditionally one of the main themes in Cultural Astronomy research. In the last two decades of the XXth century, Michael Hoskin endeavoured the task of measuring a comprehensive set of orientations of megalithic monuments, especially in the Iberian Peninsula and the Balearic Islands. The results showed that nearly 90% of the monuments, mostly passage graves, dolmens, and Tholoi tombs, were facing the eastern half of the horizon, demonstrating the likely intentionality of the megalithic builders to link these structures with the heavens. Hoskin (2001). New investigation in recent years have unveiled new megalithic monuments in several areas in Iberia. Two of these new areas located in the Spanish region of Andalusia, are presented here and the results are exposed.

Antequera, in southern Spain, hosts an impressive assemblage of megalithic monuments that have recently been declared World Heritage Site by UNESCO (2019) including as Universal Outstanding Value the relation of these megaliths with the sky. One of the peculiarities of these group is the relation they manifest to the local landscape, and particularly with the peculiar geomorphic shape of Peña de los Enamorados hill. In the recent years (García Sanjuán et al 2023), a new megalithic monument (Piedras Blancas) has been discovered in the vicinity of this hill. Possibly of the same age as Menga, it has been carefully excavated and the remains inside have been recovered and dated, allowing for a diachronic analysis of the orientation of the different stages.

In the province of Huelva, inside the medieval castle of Cumbres Mayores, a number of standing stones have recently been identified, possibly forming an enclosure. The archaeological excavations granted performing orientation measurements, that link particular directions with the solstices and the surrounding landscape.

The new megaliths allow a new reading the the megalithic phenomenon in Andalusia including the landscape and skyscape perspectives (Wheatley et al. 2010).

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Archaeoastronomy in Sicilian Prehistory: an update with research from the last 5 years

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keywords: Archaeoastronomy; Early Bronze Age; skyline; Sicily; Muculufa; Riparo Cassaturo.

ABSTRACT

This contribution represents a report of the archaeoastronomy studies conducted in Sicily in the last 5 years. Archaeoastronomy, or more generally cultural astronomy, studies in extreme synthesis the relationship between man, the sky and architecture in antiquity (RUGGLES 2015; MAGLI 2016). More recently there is also talk of 'skyscape archaeology', to underline how the 'landscape-sky-observer' system is now frequently included in multidisciplinary studies involving an archaeological site (SILVA 2017).

Sicily also has an ancient history of observations and studies related to archaeoastronomy. In the second half of the 19th century the first pioneering studies of archaeoastronomy in Sicily were carried out by German and British scholars (Nissen, Koldewey, Puchstein and Penrose); the protagonists of these studies were numerous Greek temples and churches.

But it is at the end of the twentieth century that the first studies on Sicilian prehistoric monuments date back. The pioneer of these studies is the late archaeologist Sebastiano Tusa (1952-2019), who, together with the Palermo astronomer Giorgia Foderà Serio and the English historian Michael Hoskin (1930-2021), started two interesting multidisciplinary investigations campaigns: the first on the Sesi of Pantelleria (TUSA, FODERÀ SERIO AND HOSKIN 1992) and the second on some rock necropolis built between the IV-II millennium BC (FODERÀ SERIO AND TUSA 2001).

In the second decade of the 21st century, interest in the discipline of archaeoastronomy is rekindled with new studies (e.g.: SCUDERI ET AL. 2013; FORESTA MARTIN AND MAGLI 2016; ORLANDO, TUSA AND GORI 2018; ORLANDO, PALIO AND TURCO 2019; ORLANDO 2020).

With this contribution we want to present the studies carried out since 2020 regarding the orientations of the Sicilian dolmens (ORLANDO ET AL. 2024) and the skyline of the prehistoric sites of Muculufa (Butera, Caltanissetta) (ORLANDO AND RIORDEN 2024), Riparo Cassaturo (Centuripe, Enna) (CAVULLI ET AL. 2024) and of the Ripari di San Giovanni (Sambuca di Sicilia, Agrigento) (CAVULLI ET AL. 2024). The Early Bronze Age site of Muculufa, due to its uniqueness in possessing an astronomically oriented 'sanctuary', is projected to become one of the most important places in Sicily from an archaeoastronomical point of view.

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Exploring Etruscan Sacred Architecture: Temple Alignments and their Cultural Significance

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keywords: Etruscan world; Landscape Archaeology; orientation; Italy.

ABSTRACT

The orientation As a part of the 'Tarquinia Project' of the University of Milan, we have explored since 2012 possible correlations between astronomical and calendrical aspects and the configuration of urban spaces and monuments, in Tarquinia and in the Etruscan world in general (Bagnasco Gianni 2019; Pernigotti 2019).

Making use of an inter-disciplinary approach, we were able to provide fresh data on well-known and long-excavated archaeological sites. In particular, the study of the orientation of the Etruscan sacred buildings has been investigated using data from different disciplines and methodologies, including archaeology, archaeoastronomy and landscape archaeology. Generally speaking, we observed the tendency by the Etruscans to orient the facades of their sacred buildings in such a way that their front was illuminated every day of the year by direct sunlight (Pernigotti 2021). However, notable exceptions exist – first and foremost, that of the hugest Etruscan temple ever built, Ara della Regina in Tarquinia (Bagnasco Gianni-Bortolotto-Magli 2013).

Furthermore, in many cases the reasons for the specific orientations remain to be investigated, especially in the case of multiple buildings and altars in sanctuaries. In some cases indeed, cultural motivations related for instance to prominent features of the landscape or, as in the case of certain urban sanctuaries, to the urban grid of the towns, have to be considered. In order to understand these aspects, a contextual analysis of the individual sites is necessary.

The talk will present a synthesis of the orientation data as well as recent results obtained for specific sanctuaries.

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Archaeoastronomy and Landscape at Troy

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keywords: Archaeoastronomy; Early Bronze Age; Troy; Turkey; skyscape; landscape; UNESCO

ABSTRACT

Troy, in northeastern Turkey, is a UNESCO World Heritage Site, with universal value to humankind. Common ideas include that the Trojan War is a fact of history. Actually, its “historicity” is a construct of later Greek historians. Excavations at Troy since the 1870s and continuing today reveal an absence of secure evidence for such events as described in the epic cycle, especially the Iliad.

Recently, scholars challenge the idea that the Trojan War has any basis in fact (SHERRATT 2010, 2017; WIENER 2007; DICKINSON 2006; HOLLOWAY 1981). Yet the Iliad remains a compelling story. What might be behind it?

Many Homer scholars have noted the cognitive spatial structure within the poem, which orders the hierarchy of supernatural forces and places them onto opposed viewing platforms (CLAY 2011, TSAGALIS 2012). Others have hiked the region, copy of the Iliad in hand, identifying topographical features with the aid of the cognitive mapping provided by the poet (COOK 1973, LUCE 1998).

But so far, no one has asked if this unique and unavoidable narrative structure might be embedded in the Trojan landscape, with special attention to the “skyscape” and horizon interactions. We propose to study this aspect.

Archaeology at Troy recently confirmed that the oldest artifacts found there, including a figural standing stone, and “cupmark” stones depicting constellations, correspond to an occupation almost 700 years before the conventional founding of the city (GOVIER 2019). We suspected this already, and this gives us a starting point for a date (3500 BCE) and typology: a megalithic site with ritual astronomical observations.

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Solar illumination of Newgrange passage tomb—advances in recording techniques and geospatial analysis.

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keywords: Cultural heritage, winter solstice, Newgrange passage tomb, GIS, Livestream on Internet, Social Media metadata

ABSTRACT

The archaeological ensemble of Brú na Bóinne, East Ireland, includes the three mega-tombs named Dowth, Knowth and Newgrange. These were constructed during the Irish Middle Neolithic in c. 3200 BCE and are characterized by a vast cairn delimited in each case by numerous decorated kerbstones, a developed cruciform burial chamber and the greatest concentration of figurative megalithic art in Western Europe. Only one, Newgrange, is astronomically aligned on winter solstice sunrise. Design intentionality can be confidently inferred due to the existence of a so-called 'roof-box' – a small lithic slot opening or window aimed at the very sector of the horizon and sky which frames the rising Sun at this numinous time. Such an architectural construct is unique in the European passage tomb tradition, permitting direct light from the risen sun to accurately and periodically illuminate the chamber floor and end recess. Attributes such as these emphasize the economic, funerary, religious and social importance and role of such monuments in prehistory.

During 2020 and 2021, the Irish Government enforced widespread public health measures to combat the COVID-19 pandemic which had reached here in February 2020. This resulted in the closure of Newgrange passage tomb to visitors for the two-year period in question. To take advantage of the empty chamber coinciding with the mornings of solstice, the author was requested by Government to lead a multidisciplinary research team to undertake new research which would scientifically record and analyze the light phenomenon over an extended period. The remit additionally included livestreaming the phenomenon over the internet thereby communicating cultural heritage and cultural astronomy to a global audience. Investment to expedite this ambitious plan coupled with transdisciplinary thinking by members of the team identified a range of research aims and deliverables. This paper will present a description of the innovative recording technologies and image analysis techniques successfully employed to exactly document and archive a priceless cultural asset for posterity.

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A diachronic study of the Roman landscapes and skyscape of Tarraco (Tarragona, Spain)

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keywords: archaeoastronomy, Roman landscapes, centuriations, Roman archaeoastronomy

ABSTRACT

Tarraco (Tarragona, Spain) was the provincial capital of the largest Roman province in Hispania and in the Western Mediterranean, Hispania Citerior Tarraconensis. During centuries it experienced various periods of intense building activity and land transformations that modified both the rural and urban landscapes, more appreciably since the consolidation of the Roman power in the Iberian Peninsula, in the 2nd century BCE (Gutierrez-García and Serena Vici, 2018). Fortunately, various remains produced during centuries of territorial organization and development of Tarraco are still preserved, making this site a magnificent place in which to observe possible particularities of each constructive moment.

Several works have previously studied the presence of astronomical patterns in the configuration of the territory in Roman towns and centuriations (see e.g. González-García et al., 2019; Rodríguez-Antón et al., 2023) and, specifically in Tarraco, a connection between a “sacred” conception of the space and the layout of the land originated during the foundational rite has been suggested (Palet Martínez et al., 2010). On this basis, in this work we present a diachronic study of the evolution of the urban and rural design of Tarraco and the exploration of possible relations between the structures constructed in different phases of the Roman presence with the surrounding land and the sky. To do so, a wide range of methodologies have been employed, including an analysis of data obtained in situ in the main urban areas, complemented with GIS-based archaeomorphological and landscape research of the centuriated systems developed around this centre.

By this, our aim is to go beyond the practical aspects of Roman surveying and explore whether particular celestial objects in special moments of their cycles were considered in the various projects of land appropriation, territorial division of the Ager Tarraconensis and the urban development in one of the most relevant towns in Hispania. This would allow to determine whether Roman surveying techniques were flexible and adaptable enough to overcome the environmental constrains in order to fulfil other, more symbolic, criteria, which ones would those be and the reasons behind it.

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Maira, Hekate, Lagina, Sirius

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keywords: Lagina, Hekate, Sirius, Ancient Greek and Roman Religion, Ancient Greek Mythology.

ABSTRACT

The sanctuary at Lagina in Caria is the only known major sanctuary dedicated to the chthonic goddess Hekate. The use of the area for ritual purposes can be documented since the 4th c. BC, although the buildings are dated in the late 2nd c. BC; it was active until the 4th c. AD. The excavations revealed some peculiar features: for example a trapezoid peribolos, as well as a different orientation of the temple and the altar. The temple is referenced in the bibliography for well over a century mainly because of its unusual programme of sculptural decorations that has puzzled the art historians on its ultimate meaning, while the building itself has only recently been studied in similar breadth.

By using remote tools (i.e. Google Earth) we study the orientation of the structures in the sanctuary at Lagina. Multiple celestial targets are found, which may be linked to Hekate: Venus, Major Lunar Standstill, Gemini and Sirius.

In our work we try to establish a cultural connection between them and Hekate. In this process we discuss the ancient myths pertaining to the goddess and we examine both her chthonic and ouranian aspects. Thus, we find references beyond her standard association with the Moon: Hekate's two torches as symbols of Venus, her common worship of her with Castor and Pollux in Samothrace, and a connection with Sirius via a mythological dog called Maira.

The latter association will be studied in more detail, as it may reveal information on the yet unknown rituals that took place in Hekate's sanctuary in Lagina. For example, the altar of Hekate is constructed in a manner that it was fit for a goddess that belonged to the sky and not the underworld. There are similarities between Hekate and Sirius' cults that could be a testimony for their connection at Lagina, not least that the dog was her sacred animal. Archaeological finds, such as coins, will also show a connection of Hekate to astral symbolism in the late Hellenistic period and the Roman Imperium, when astrology was important.

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