Efrosyni Boutsikas, *The Cosmos in Ancient Greek Religious Experience: Sacred Space, Memory, and Cognition*


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This work considers the astronomical orientation of temples in the context of ancient Greek religion: this is of great importance for the development of skyscape archaeology in the ancient Mediterranean world. The target readership is broader than just specialised archeoastronomy scholars, and the book provides the introductory tools for archaeologists who also wish to approach the topic of skyscape. In this way, this publication opens up a further bridge between archaeology and archeoastronomy in Britain and Europe. The archeoastronomical approach of Efrosyni Boutsikas has a neat archaeological imprint, as reflected by the author’s background and current position as Senior Lecturer in Classical Archaeology at the University of Kent. The publication is the distilled analysis of Boutsikas’ doctoral thesis at the University of Leicester under the supervision of Clive Ruggles and Graham Shipley (Boutsikas 2007). Work in this field was highly needed, especially as in the archaeological community there is still a widespread belief that Greek temples simply face east in the direction of the rising Sun (Mikalson 2010, 18). In the nineteenth century many scholars thought that the main axis of the temple was laid according to the direction of the rising Sun on a specific day, the deity’s birthday or the sanctuary festival day. Heinrich Nissen (1869) first proposed that the time of festivals could be calculated from the orientation of the rising Sun on the temple axis. With this assumption, Walter Penrose (1893) attempted to date temple foundations by using astronomy, orientations and festivities, but his propositions did not collimate at all with the archaeological data. Subsequently, at the beginning of the twentieth century, with a more complete methodology but assuming the same working hypothesis, William Dinsmoor (1939) measured the orientation of 110 Greek temples; he found that 73% of his sample points east within a window of 30°. Since then, some advances have been made on the topic, first of all by Boutsikas, who has also identified stellar targets in in-depth...
case-by-case investigations in parallel with statistical analysis. Her book’s appendix, with 240 measured sacral structures, will remain a useful reference tool for studies in the field for a long time, even though there is no azimuth entry value but only the declination.

In the first three chapters, the author introduces the aims of archaeoastronomy within the context of Greek temples’ orientations and also contextualising theories on cognition, place and memory in the religious experience. In the third chapter, “Worship in Space and Time”, statistical analysis is presented regarding the whole sample measured by the author, separated into worshipped deity and historical period and bringing to light the need for more detailed case-by-case study. Chapters 4–6 are an in-depth focused discussion on several sites, from Apollo cults at Delphi, Delos, Dreros, Miletos, Didyma, Klaros and Bassae to the Athenian Parthenon and Spartan initiation rites of young women, and ending with the mystery cults in Eleusis, Lykosoura and Samothrace. The book’s epilogue concludes and refines the general argument on the role of the sky in Greek ritual. Among the case studies, some are very attractive interpretations, whereas others tend to remain suspended in the question of intentionality due to a high margin of error in the astronomical alignment or the lack of calendric evidence. In general, the mythological and cultural contexts are prominent and somehow dominant with respect to the bare orientation results, tending to constrain the astronomical identification and, consequently, the interpretation. For instance, in Eleusis the association with the star Spica in the context of the mystery cults is very appropriate, but the orientation of the Archaic Ploutonion does not seem so “close” to the rising and setting position of the star, being 11° offset (p. 165). Similarly, “the orientation of the Telesteria, but particularly the orientation of the Ploutonion is very close to the rising position of the Sun at the equinoxes” is doubtful given the declination presented of −18° for the former structure and −9° for the latter, whereas the declination of the Sun at the equinox is 0° (p. 163). Even with the importance of the equinox, calendric reference is attested for timing the Lesser Mysteries and Greater Mysteries, and it would have been interesting to explore further such incongruity in astral and archaeological structures’ orientations. In general, the investigation is carried out from the archaeological towards the astronomical, highlighting the complexity of the topic to be disentangled using multiple approaches.

In Boutsikas’ chapter on Apolline cults, the journey of the god to the land of the Hyperboreans is related to the movement of the little constellation Delphinus (pp. 71–95). Other authors, such as Ioannis Liritzis and Belén Castro, have suggested the Lyra and Cygnus constellations were related to the oracle consultation (Liritzis and Castro 2013; Castro et al. 2016), somehow reflecting Boutsikas’ main argument given the vicinity of the three asterisms. In contrast, Tomislav Bilić has discussed the northwards journey of Apollo in relation to the course of the Sun (Bilić 2012, 2021). Again, the cultural importance of Apollo Delphinus in Delphi is very convincingly argued, even though the orientation of the temple (declination of +48°), greatly differs from the astral constellation (6° and 10° respectively in the seventh and fourth centuries BC) (p. 75). The author’s main argument is that the high mountains in Delphi delayed the visibility of the constellation, providing adequate time for travellers to prepare for the journey for the oracle consultation (p. 76). In the context of Apolline cults, the study should also be placed within the debate.
on the elemental attribution of Greek deities with natural elements, such as Apollo’s identification with the Sun (p. 71). Whilst such a topic is controversial, it would allow the author to untangle some assumptions (Konaris 2010).

In Sparta, the heliacal rising of the Pleiades is the guiding thread of the argument once the literary evidence from Alkman’s Partheneion, the maiden’s song-dance of a seasonal polis festival, is considered (Ferrari 2008). The orientation of the altars of Artemis Orthia in Sparta fits well with the rising point of the Pleiades, and the integration between literary, archaeological and astronomical data provides a piece of extremely important evidence pointing to the significance of skyscape in ancient Greek ritual, already finely argued in a previous contribution (Boutsikas and Ruggles 2011). Comparison of Sparta and Messene appears questionable on the sole basis of temple and altar orientation (p. 145), but is reinforced by the historical context on the relationship between the two poleis. The orientation of the two subsequent temples remains not fully explored, and it is possible that topographical targets might have a role to play here. John Brady Kiesling has suggested that the Hellenistic temple of Artemis Orthia in Sparta is oriented within 2° to the sanctuary beyond Mt Taygetos of Artemis Limnatis, as a political gesture for reclaiming a border land (Koursoumis 2014; Kiesling 2018, 11). He argues that the intention of the semi-circular theatrical arrangement might have been to direct vision towards the west, although he still acknowledges the astronomical orientation of the altars (Kiesling 2018, 11). In order to give a full explanatory model, it is surely necessary to question both astronomical and topographical targets in sacral orientation. Claudia Moser’s attempt at orientation analysis in the Latium region in Italy is very suggestive and provides a complementary literature for the comprehension of the topography of the sacred in the ancient Mediterranean world, integrating the skyscape with the ritual landscape (Moser 2014).

In the field of classical skyscape archaeology, discussion is needed to identify a methodology to discern “the sacred direction” of a sanctuary. This issue is often underestimated, and scholars adopt different assumptions without a critical argument for a specific choice. Often, only one direction is considered among the two possible directions of the main temple axis: the prayers-facing direction towards the cella or the opposite statue-facing direction. If the former might be applied in the case of participant-perspective analysis, the latter might be appropriate for studying the natural illumination of temples (Pernigotti 2019). Boutsikas discusses spatial and memory cognition, but orientation is measured from the cult-statue perspective. Furthermore, diagonal temple axes are also used to explain the rationale for a building’s orientation (Ranieri 2014). Diagonals are also employed by Boutsikas for the temple at Bassae, which orientation might be indicative of a precise arrangement for hierophany with sunlight entering from a lateral side (pp. 100–111). Here, she adopts virtual archaeological methods to test the possible position of the beam of light entering the temple at the equinoxial sunrises. Across the study, graphic reconstructions of 3D structures are combined with planimetries and the terrain morphology, although the colour plates are too dark to convey the point fully.

The book’s glossary is very useful, especially for the phases of the stars, since some ambiguities on “heliacal” and “acronychal” rising and setting are widespread among scholars (Brady 2015, 80–82). However, the reader should be aware of a small conceptual
error in the “heliacal setting” definition which does not help to clarify the star phase: that “the star set below the horizon while there was still too much sunlight for it to be seen” would not be “on the previous night” as stated, rather on the night following the heliacal setting (p. 213). The book’s conceptualisation of time is appropriate: not just calendric conversion between Gregorian and Greek calendars, but also often translating months into fluctuating average periods, giving significance to astronomical seasonality as the main thread of the discourse. The specific phase of the Moon in relationship to the Sun would assign each Greek month to the correct yearly reckoning.

In conclusion, this publication can be placed in the essential bibliography on skyscape archaeology. It helps to bridge the gap between archaeology and astronomy, tracing the correct path for further research on the topic. In-depth case studies have proved very fruitful for giving meaning to statistical analysis. Boutsikas’ *The Cosmos in Ancient Greek Religious Experience* opens up new questions on the role of the sky in ancient Greece, in its intimate intricacy with ritual, religion, politics, agricultural economy and the cognitive spatial memory of the individual.

**References**


