

The Role and Importance of the Sky in Archaeology: an introduction

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“sky·scape *noun* \ˈskī,skāp\

1 : a part of the sky with outlined terrestrial objects that can be comprehended in a single view [...]

2 : a picture that includes an extensive view of the sky”
(MWD 2004)

The Merriam-Webster dictionary definition above stems from the art world, where skyscape paintings such as “Starry Night” by Vincent van Gogh (figure 1) have become famous.. Van Gogh’s oil painting shows a distant mountainous landscape, a small town nearby with a cypress tree partially restricting the view towards the left. Above, a crescent moon and several other lights, depicting stars, illuminate the setting and are disturbed only by a whirlwind of cloud in the centre of the canvas.



Figure 1 – Vincent van Gogh, *Starry Night*, 1889, oil on canvas, New York, Museum of Modern Art.

Van Gogh’s skyscape is as realistic as it is filtered by the perceptual lens of the artist: “The mountains in the *Starry Night* are the same Alpilles that Van Gogh could see from his cell window [...]. From that base in observed reality, Van Gogh’s imagination took hold. But it was fed by sources in both nature and art”

(Soth 1986, 303). Several scholars have tried to identify the depicted constellation, with both Aries and Cygnus being likely, but not certain, candidates (Boime 1984, Whitney 1986). Soth, on the other hand, believes that the depicted stars are not realistic but instead that their meaning should be sought in the conceptual and circumstantial history of the painting. She concluded that Van Gogh unconsciously merged his desire to both paint a skyscape as an image of consolation, and paint the biblical episode of the consolation of Gethsemane, into his 1889 painting. "Unable to paint *The Agony in the Garden*, Van Gogh projected its emotional content onto nature and created a sublimated image of his deepest religious feelings. [...] The blue for Christ and the citron-yellow for the angel became the sky, and the stars and moon." (Soth 1986, 312). As Soth put it, "At its most profound level, the *Starry Night* is Van Gogh's *Agony*." (1986, 312).

This skyscape painted by Van Gogh is no different from those painted, sometimes metaphorically and other times quite literally, by other cultures, both past and present. Different cultures might have "access" to the same sky but "see" completely different skies. As an example, astronomers have grouped the visible stars into readily identifiable shapes that are known as constellations. The modern western constellations are based on those catalogued by Ptolemy in the 2nd century CE (Ptolemy, 1998), though some might be even older (e.g. Frank and Bengoa 2001). However, other cultures group the stars differently: for instance where we see a large bear, a big dipper, or Charles' wain (the constellation *Ursa Major*), the Inuit of Igloolik (Canada) see a caribou (Macdonald 1998, 79). Others, like most contemporary hunter-gatherer groups, name individual stars but tend not to group them in constellations (Hayden and Villeneuve 2011, 340-344), whereas Quechua speakers of the central Andes see constellations in the "dark clouds" of the Milky Way (Urton 1981). Ruggles and Saunders proposed three key processes in the formation of a skyscape: observation, perception and use (Ruggles and Saunders 1993, 2-4). Observation denotes the ability to notice the sky and its components, either casually or deliberately. Perception involves "making sense of and attaching meaning to particular observations" (1993, 2), whereas use refers to the employment of celestial phenomena for any social, economic, political or ideological purpose. Mirroring Cummings' words for the landscape (2001, 82), one can say the sky is a natural phenomenon that is turned into a cultural skyscape through human agency.

The study of the relationship between the sky and human societies has become the purview of Cultural Astronomy. Under this umbrella term fall the study of the history of astronomy and astrology, ethnoastronomy and archaeoastronomy, each with its own methodologies and primary sources. Archaeoastronomy is the key concern of this volume although from time to time, authors leap into history and ethnoastronomy and back again. Archaeoastronomy is the study of how people have understood, conceptualized and used the phenomena in the sky and what role the sky played in their cultures, by analysing their material remains. It inhabits that interdisciplinary "no man's land" between astronomy and archaeology, and therefore draws on established knowledge and techniques from both fields. It has a considerably younger history than its two big sisters,

but in the past few decades it has found its feet by becoming deeply rooted in fieldwork and statistical tests for validity (e.g. Ruggles 1999). Archaeoastronomy has become an academic discipline, with its own conferences and journals, but in the process of (re)defining itself to withstand scientific scrutiny it lost its links to the wider archaeological and anthropological communities. The reasons for this are now historical but the consequences are clear: the different approaches are not being integrated into holistic interpretations of the archeological record.

Why then use a new term – *skyscape* – to talk about the use of the sky in culture? The sky has been neglected within the archaeological world, but ethnography and archaeoastronomy tell us of its importance and role for most, if not all, cultures (Campion 2012). In using a new word old assumptions are not carried over so easily, and new connections can be crafted. There are precedents for using new terms to re-think old notions in the establishment of concepts such as *landscape*, *taskscape* and *seascape* in archaeology. The study of the landscape is now well established in archaeology (e.g. Tilley 1994, Cummings 2001). Seascapes and waterscapes extend these approaches into the seas and rivers (e.g. Wehlin 2010), whereas taskscapes look at the executed tasks and the ‘temporality of the landscape’ (Ingold 1993). Skyscapes extend this upwards to encompass the heavens and the celestial bodies and how they relate back down to human beliefs and practices, to their notions of time and place, to their structures and material remains. The thread that unites all of these “-scape concepts” is that they refer to an ensemble of interlocked components, each taking “its meaning from its position within” the ensemble (Ingold 1993, 158). The latter, referring back to the dictionary definition of *skyscape*, “can be comprehended in a single view”. The disciplines that study these “-scapes” share “a theoretical concern with how people constructed and used the environments around them” (Ruggles 2011, 7), as well as a variety of unique field techniques and methods that range from the quantitative to the phenomenological. They are sister disciplines: archaeoastronomy looks up, whereas landscape archaeology and the others look down and around, although they always meet at the horizon.

The case studies in this volume illustrate several of the characteristics of a *skyscape* that mirrors those used to describe landscapes. Keeping to Cummings’ extensive list of landscape traits (2001, 75-80) it will be shown that: the *skyscape* “plays an active role, structuring and structured by human agency” (chapters 3, 4, 6, 10); myths may shape and be shaped by the sky (chapters 7 and 10); the *skyscape* “is an ideal canvas for the application of metaphors” (chapter 7); people’s “ideologies form and are formed by” the *skyscape* (chapters 5, 7 and 10); like landscapes, *skyscapes* “are open to control and thus become tied to political strategy and structures of inequality” (chapter 5); and that the *skyscape* “structures time and time structures the way we experience” it (chapters 7, 8 and 10). The similarities are not merely academic as several cultures do conceptualize the sky as a landscape, or see the two as equivalent on different levels, sometimes forming a holistic representation of the cosmos (e.g. Urton 1981, 63). In this way, the horizon also gains a new standing: that of mediator between the landscape and the *skyscape*, between the earth and the sky. It is thus no wonder that sun, moon and star-rises and -sets are the most widespread celestial phenomena encoded in alignments of structures. An understanding of

the dynamics of rises and sets, informally known as 'horizon astronomy', is one of the most important tools of an archaeoastronomer.

This is where this volume comes in. It is based on a half-day session organized by the editors at the 2012 meeting of the Theoretical Archaeology Group (TAG), which took place at the University of Liverpool. That session's title is now the title of this introduction. The aim of that session, as set out in the proposal to the organizers, was to "extend the discussion of the role and importance of the wider environment into consideration of the significance of the celestial environment – the 'skyscape', to past societies and to the understanding and interpretation of their material remains." This volume strives to achieve that same aim. It shows how it is not only possible but even desirable to look at the skyscape to shed further light on human societies. This is done by first exploring the historical relationship between archaeoastronomy and academia in general, and with archaeology in particular. The volume continues by presenting case-studies that either demonstrate how archaeoastronomical methodologies can add to our current understanding of past societies, their structures and beliefs, or how integrated approaches can raise new questions and even revolutionise current views of the past.

Following this introductory chapter, Nicholas Campion looks at the history of archaeoastronomy, particularly by tracing the key scholars on both sides of the archaeology / archaeoastronomy divide, as well as the evolution of archaeoastronomical methodologies. The contested nature of prehistory is seen to have been paramount in the relationship between the two disciplines but, more recently, the two have begun to converge in their multi-disciplinarity.

Chapter 3 continues to explore the rapport between archaeology and archaeoastronomy but narrows its focus down to the study of the Recumbent Stone Circles of northeast Scotland. Liz Henty explores the history of work done on these four thousand year-old monuments, as well as her own fieldwork, to highlight the many differences between the disciplines that have rendered their interpretations incomplete. By contrast, Henty suggests that 'the prehistoric sky is as much an artefact to be examined as a polished stone axe' and that the combination of methodologies stemming from the two fields provide fuller explanations.

Today few people know what phase the moon is on any given day, or how high above the horizon the sun is going to be at a given season. The modern world has disengaged with the sky, partially due to its obfuscation by the aptly named skyscrapers and the light pollution stemming from the urban centres. This is one of the reasons why academia has sidelined archaeoastronomy, because the modern skyscape itself is neglected and misunderstood. Daniel Brown, in chapter 4, explores the challenge of overcoming the modern period's disengagement with the sky, through the current topics of sustainability and light pollution. "Dark Skies" projects extricate people from the ever-present urban glow into areas, such as the Peak District national park, which have preserved the integrity of their skies. Such experiences demonstrate that the movements of sky, although presently the domain of astronomy and physics, are

perceived by everyone without the need to recur to equations and other modern contrivances. This presents unique opportunities to understand how individuals negotiate meaning and embrace the experience of place, which will 'allow one to judge the impact a skyline would have had in ancient times.'

In chapter 5 Lionel Sims takes a multi-disciplinary look at some peculiar features of the Avebury complex (Wiltshire, England). The author shows how the traditional archaeological narratives leave much of the material evidence surrounding the West Kennet Avenue unexplained. These, he argues, can be understood with recourse to cultural astronomy, "an additional tool to recover the ancient past". Sims notes the careful placing of the avenue's stones so that celestial alignments to the sun and/or moon are visible when looking from behind one stone to another. In addition, the evidence surrounding stone pair 30, like the absence of a stone 30b, might be explained by a materialization of the lunar phase cycle of 29.5 days. Using the hypothetico-deductive method, and anthropological models for the Neolithic transition, Sims suggests a model for "male cattle-herder monopolisation of lunar-solar ritual confiscating ancient egalitarian matrilineal lunar rituals" that demonstrates how the skylines can be appropriated by an elite for political uses.

Jumping to the middle of the Mediterranean, chapter 6 takes us to the Late Neolithic temples of the Maltese islands. These megalithic structures are unique in style and their purpose is as poorly understood as their origins. One of the last and most extraordinary complexes, that of Mnajdra on the island of Malta, consists of three temples of varying dimensions and style. The chronology of their construction has been gauged by ceramic shards found in several rooms of the temples, whose typology can only suggest a very rough sequence. To the typological evidence, Tore Lomsdalen adds his archaeoastronomical fieldwork and notes that the main temple's most spectacular feature – the illumination of key internal elements at sunrise throughout the year – has been encoded in the temple's earlier incarnations. As the temple was expanded so too did the astronomical alignments become more precise and sophisticated, mirroring the increase in architectural complexity. Based on the combination of typological and archaeoastronomical evidence, Lomsdalen proposes a well-defined building sequence for the monumental complex, illustrating how archaeoastronomy can be used for more than the identification of celestial alignments.

Egyptian religion's relationship with astronomy, in the four thousand or so years of its history, is well documented (e.g. Belmonte and Shaltout 2010). But the earliest known religious texts, carved on the inner walls of the pyramids of the Fifth Dynasty are poorly understood. In chapter 7 Bernadette Brady re-examines the Pyramid Texts in light of an understanding of the yearly cycle of the stars. These stellar dynamics were classified by Ptolemy in the first century CE, but present-day academia is yet to pay attention to this aspect of his work. To help deal with this oversight, Brady proposes a set of unambiguous terms which acknowledge and separate the star phases of Arising and Laying Hidden and Curtailed Passage. Armed with this knowledge, the religious content of the Pyramid Texts is seen to describe naked-eye astronomical phenomena. In this way, the very origins of some of Egypt's long-lasting religious concepts, such as

the King's afterlife among the Imperishable Stars, can be seen to ultimately derive from an understanding of stellar astronomy. Furthermore this chapter, because it demystifies the stellar phases, is a major contribution for the understanding of how other past societies might have engaged with, and used, the yearly cycles of the stars.

Chapter 8 looks at the Iron Age enclosure of Lismullin, Co. Meath (Ireland). Frank Prendergast conducts a geospatial analysis of the site, including its archaeoastronomical properties. He argues that it's "avenue may have been intentionally orientated so as to align upon the autumnal appearance of the Pleiades", which would have coincided with the end of harvest and the beginning of winter. This hypothesis is, as the author points out, one of many possibilities. To explore how the site could have been used as a structure for public gathering and ceremonies, Social Network Analysis is applied to the data. Prendergast concludes that the enclosure contains "the hallmarks of a temple site – large scale, formal entrance, processional space, threshold, depositional space, viewing space, openness and planned orientation." This chapter is one of the first published applications of this methodology to archaeology, a methodology that is becoming increasingly popular, as attested by the upcoming journal special issue by Evans and Felder (2014).

Olwyn Pritchard then takes us across the Irish Sea into Pembrokeshire (Wales). In Manorbier a unique dolmen, the King's Quoit, rests on a slope that allows for an un-obscured view toward the north. From this position two Early Bronze Age round mounds are seen on the horizon, lying almost exactly equidistantly from true north. To reconstruct the prehistoric skies, and assess their importance, one needs to have a date for the archaeological site. The King's Quoit dolmen is not directly dated, however the author makes a case for an Early Bronze Age date, making it contemporaneous to the mounds seen on the horizon. During this period a particularly bright star, Deneb, would have been seen to set in the western mound and rise, four hours later, above the eastern mound. At the same time, the even brighter star Vega, would have grazed the horizon, never truly setting. If the positioning of the dolmen and mounds relative to these northern stars was intentional, it demonstrates that Bronze Age Britons were aware of the stellar phase of Curtailed Passage and certainly this would have been meaningful to them, just as it was for the Ancient Egyptians.

In the last chapter, an approach that integrates landscape and skyscape archaeology is taken to re-assess the location and orientation of the dolmens of a particular river valley in the northwest of Iberia. Fabio Silva finds a pattern common to all known structures in this region that emphasizes the view from within the dolmens' chamber. This pattern highlights the region of the horizon where Aldebaran, the brightest star of Taurus, would have been seen to rise, directly above a conspicuous mountain range. The heliacal rising of this star, at the end of April, could have been used as a seasonal, ceremonial and economical marker, as it is known that the dolmen builders would, at some point during the spring, move from the river valley into the very mountain range above which the star is seen to rise. This pattern raises new questions on the megalithism of

north-west Iberia, particularly as to what relates to the dolmens' meaning and purpose, which are explored in chapter 10.

In deference to Lévi-Strauss, who said “animals were good to think” (Lévi-Strauss 1973, 162), these chapters illustrate that skylscapes too are “good to think” with. For Van Gogh, his “Starry Night” was an image of consolation, related to the biblical episode of the garden of Gethsemane. For past societies the sky was an important resource and an equally significant component of their world-views and social lives. For present-day scholars who try to shed light on the past, archaeoastronomy complements other approaches to the interpretation of the material record. This volume shows that more empirical and theoretical work stills needs to be done to deal with the interpretative subtleties of the integration of the disciplines, but it is no longer possible to neglect the role and importance that skylscapes have played in the social, economic, religious and political spheres of cultures around the world in the past.

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