

Editorial

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A society's concept of time is inseparable from the world that surrounds it (see, for example, Aveni 2000). The wider environment, whether it be the land and vegetation that envelop a given society or the Sun, Moon, stars and planets above, is renewed on a cyclical basis. Like the environment, time is often conceived as cyclical in nature: days roll by, months, seasons, years, generations, in a never-ending loop that is marked only by moments of transition. The dawn's twilight piercing the darkness of the night, the first glimpse of the new Moon at sunset, the blossoming of spring flowers, the first snow, the setting midwinter Sun or the heliacal rising of a bright star are but examples of phenomena that convey or mark temporal transitions.

Such moments are often liminal, not part of the cycle of time but apart from it – “betwixt and between” to use Turner's expression (Turner 1967). It is perhaps their otherworldliness that makes them, on the one hand, a source of wonder, and on the other, true anchors for social and religious life, when relations are started, renewed or transformed. And as we know from the ethnographic record, those social relations can be established not just with other “people” (as we understand that word) but also with those “other” people that Westerners perceive only as non-human beings or inanimate objects – and which include the celestial objects (see, for example, Iwaniszewski 2011; Malville 2015).

But there is a key difference, at least in the eyes of these beholders, between ecological and celestial indicators of time. Ecological indicators are affected by local and annual variations in weather and climate, whereas the celestial “clocks” keep ticking at a constant rate. The blossoming of the first flowers or the return of migratory birds might be delayed by a prolonged cold winter, but the solstices will occur regardless of temperature. They may or may not be observed – for example, if cloud cover prevents sunrise or sunset from being seen – but they are never delayed or premature. It is therefore not surprising to find that celestial objects feature as important time-structuring devices for so many non-Western societies (for example, Fabian 1992; MacDonald 1998; Aveni 2000; Holbrook *et al.* 2008).

Through the analysis of material, environmental, ethnographic or historic records, scholarly investigation into a society's skyscape positively contributes to enhancing

our understanding of that society's time and, by extension, of that society's world. It is therefore not surprising that a major focus of skyscape archaeology continues to be the intersection of archaeology with time, as this fifth volume of *JSA* demonstrates.

This issue's first research article, by **Eberhard Zangger and Rita Gautschy**, unpacks the "Celestial Aspects of Hittite Religion" by interpreting a sequence of rock-cut reliefs as a time-keeping device used to determine when additional months were required to keep an essentially lunar calendar in tune with the seasons – an important problem that most other contemporary societies were also grappling with. This serves as a springboard for the authors to take a fresh look at the wider sanctuary of Yazılıkaya and the layout of the Hittite capital *Hattuša*, in their chrono-cultural context, and to highlight different celestial elements that would have been features of the Hittite skyscape, and their socio-cultural relations. The article is also our first gold open access article, which means that it is freely available for anyone to read – whether they are *JSA* subscribers or not.

A concern with appropriate timing, whether for religious or subsistence concerns, seems almost universal. In Mount Murad in Armenia, a complex that combines tumuli with petroglyphs and sheepfolds is suggestive of a ritual centre that could have only been used in the summer months. In "The Skyscape of Mount Murad of Armenia: A Possible Pastoral Calendar and Ritual Site", **Marc Eduard Frincu** suggests that a series of alignments to summer solstice are suggestive of its use as a seasonal marker, though in this case, likely for ritual purposes. An interest in the celestial vault is also indicated by the art found at the site. It is hoped that this article will attract more attention to this under-researched site, which has not been fully assessed by scholars in recent times.

Our third research article, "Enduring Sacred Places: The Astronomical Orientation of the Iberian Cave-Sanctuary of Cueva Santa del Cabriel in Spain", by **Sonia Machaue López, César Esteban and Fernando Moya Muñoz**, presents a third example of a temporal anchor in the form of an alignment. In this case it is that of a cave that has been in use since the Late Chalcolithic and whose access corridor is precisely oriented towards sunset at the summer solstice. This would have created a light effect often referred to in the literature as a "light hierophany", a feature of many other Iron Age cave sanctuaries – an interpretation that is supported also by the Iron Age material associated with ritual practices discovered in this cave.

In past issues we have reprinted seminal articles relating to our field alongside a modern commentary. Our ability to do so is governed by the attitude of the copyright holders. The archive of the *Journal for the History of Astronomy* and its *Archaeoastronomy Supplement* is always worth revisiting as it created an academic platform for archaeoastronomy from its inception in 1970. However, since the journal was taken over by Sage Publications Ltd, access has become expensive and, not only that, during the transfer the *Archaeoastronomy Supplement* archive was lost. Unfortunately, therefore we cannot reprint L. V. Morrison's 1980 paper "On the analysis of megalithic lunar sightlines in Scotland", though we received permission from Sage to reprint two figures from it. The full article can, nevertheless, be found open-access at the SAO/NASA Astrophysics Data

System, at <http://adsabs.harvard.edu/full/1980JHAS...11...65M>. We are delighted to publish a modern commentary on this seminal paper by **Lionel Sims** which demonstrates that lunar standstills are still tricky targets to identify.

This issue features two conference reviews: firstly, **Iliaria Cristofaro** details the introductory session of the International Conference on the Astronomical Heritage of the Middle East, held at the Republic of Armenia National Academy of Sciences, in Yerevan, Armenia, between 13th and 17th November 2017. Skyscape archaeology and astronomical heritage in this area has received less attention than at others normally found on the international conference list, so we hope this conference starts a new tradition. The second conference was the 26th Meeting of SEAC, which was held in Graz in late August 2018. Reviewed by **Georg Zotti**, he explains how it overlapped with the International Astronomical Union's annual meeting which was also discussing astronomy in history and culture. The following four book reviews demonstrate some of the varied spokes found in skyscape archaeology's umbrella. Different methodologies and a continent divide John Waddell's *Myth and Materiality*, which is centred on Irish myth and reviewed by **Frances Clynes**, from *Archaeology and Ancient Religion in the American Midcontinent*, edited by Brad H. Koldehoff and Timothy R. Pauketat and reviewed here by **Steven R. Gullberg**. **Michael A. Rappenglück** steps into the near, deep and distant cosmic space to explore the papers in Nicholas Campion and Chris Impey's edited volume *Imagining Other Worlds: Explorations in Astronomy and Culture*. Last, but certainly not least, is a detailed exposition of Martin Holbraad and Morten Axel Pedersen's *The Ontological Turn*, expertly reviewed by **Alejandro Martín López**.

JSA continues to expand and go from strength to strength. Not only are we indexed on ERIH Plus, we have now been accepted by Google Scholar which has picked up our content archive for its search facility and Google Scholar alerts. As you will be aware, *JSA* publishes two issues each year, which come out around the summer and winter solstices. In between these times you can visit our webpage to browse our current volume, read notices of forthcoming papers and explore our archive. This year alone, up until the end of March we have had 3876 page visitors. You can also stay in touch via our Facebook page www.facebook.com/JSkyscapeArch or @JSkyscapeArch, our new Twitter account. To help us manage this increased interest in our journal we have expanded our editorial team and are delighted to welcome **Barry Heafied** to the position of Assistant Editor, alongside existing Assistant Editor Caroline Ormrod and **Ingrid O'Donnell**, who is our new Media Officer.

References

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