

## **“Visualising Skyscapes: Material Forms of Cultural Engagement with the Heavens”. Full day session at the 38th Annual Conference of the Theoretical Archaeology Group, TAG 2016, Southampton (United Kingdom), 19th–21st December, 2016**

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This session of TAG 2016 explored the conference theme of visualisation in the context of skylscapes, by looking at how different cultures attempted visualisation of skylscapes in many different guises. The organisers, Fabio Silva (Institut Català de Palaeocologia Humana i Evolució Social and University of Wales Trinity Saint David, UWTSO) and Liz Henty (UWTSO), expanded the session to include how “modern visualisation techniques for skylscape archaeology [...] allow archaeologists to (re-)engage with the sky”.

Focusing upon visualisation of the skylscape as it is explored and communicated within the field of archaeology is indeed quite timely, especially since a specific skylscape session was not included in the programme of TAG 2015. The session organisers pointed out how in western society we have disengaged from the sky: the sky is barely apparent in everyday life and in the field of modern astronomy only becomes accessible when using complex methods and highly sophisticated equipment. Furthermore, areas of investigations deal with deep-sky objects far removed in space and time from experienceable dimensions.

This disengagement is reflected in how we understand past cultures’ engagement with the sky, even though historical and ethnographic records clearly indicate that “there is no human society that does not somehow, in some way, relate its fears, concerns, hopes, and wishes to the sky” (Campion 2012, 1); as Darvill comments, “the sky was an important domain that archaeology needs to understand better” (Darvill 2015, 147). This session took up these calls and further acknowledged the modern tools that can support the reconstruction and visualisation of the palaeo-skies that a pre-modern world would have seen. It also takes on the challenge of the skylscape as an embodied and lived experience, meaning that visualisation of the skylscape needs to take phenomenological exploration of into account.

The session began with a presentation by Georg Zotti (Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology) on his ongoing improvements to the open-source desktop planetarium software Stellarium (2016), currently at version 0.15.1. In his work, he focuses especially upon GIS-based 3D-modelling and astronomical simulations. He outlined how powerful computer-based visualisation has become in conveying detailed landscape features from a first-person perspective; this full immersion in daily and annual rhythms in the sky above allows the creation of scenarios that convey skyscape experiences. One example of this is the exhibition “STONEHENGE—A Hidden Landscape” in the MAMUZ museum, Austria, and its large-screen projection. Most importantly, Zotti showed how to create a 3D-landscape from precise landscape models, and how these can be imported into Stellarium using freely available resources. Interestingly, he elaborated on workflows to enable reliable reproductions, allowing the participant to easily attempt this for him or herself. The versatility of the final 3D virtual model in Stellarium was demonstrated by its inclusion of shadow rendering as well as its successful modelling of alignments in some given astronomical installations.

Moving away from this technical report on visualisation, Illaria Cristofaro (UWTSD) continued with a paper presenting her phenomenological exploration of the sky reflected in water. This counterbalanced the technical implementations with the conceptual difficulties of capturing a skyscape visualisation within an embodied and felt experience, here analysed by using an auto-ethnographic and reflexive phenomenology approach. Cristofaro has been motivated by natural and artificial waterspaces associated with archaeoastronomical sites, for example *huacas*. For her, these offer a metaphor associated with the heavens and the underworld, as they represent visualisations of the sky. In her deep personal engagement with two selected non-archaeoastronomical sites she elaborated on how “sky-waterscapes appear as specular worlds, where water spaces are assumed to be doorways to the inner reality of the unconscious.” For her work, she draws on a richness of data, including photography and paintings created on- and off-site. This plethora of data indicated to her that these spaces may embody symbolic death experiences. An important outcome of her work is that these findings promote new ways of engagement with sky-and-water-related archaeology.

This was followed by a discussion by Lionel Sims (University of East London) of the “Sanctuary”, a late Neolithic structure placed within the Avebury monument complex. Sims drew several disciplines into the discussion, and he began by arguing that the materiality model proposed by Parker Pearson (2012) might be too simplistic for explaining the visualisation of the Sanctuary. Sims exposed Parker Pearson’s hypothesis and others to rigid repeatable tests such as 3D modelling of archaeological site evidence and landscapes with sky simulations, as well as drawing on archaeoastronomy and myth analysis. The analysis took care to include both the rich details of the archaeological record and the special features revealed by modelling: details thus included the possible height of the posts and the fascinating placement of toads and frogs in the base of the post pits. For Sims these amphibian remains represent anti-solar behaviour, winter death and overall metamorphosis. Together with Witzel’s (2012) phylogenetic analysis of myths, his assessment allowed for a new description of the Sanctuary, in which “combined

materials and alignments were intended to ritually repair a cosmology perceived in the Neolithic and Early Bronze Age to be threatened with stasis.”

After several examples of skyscape visualisations and interpretations, Henty presented on the current state of skyscape archaeology. Here she analysed whether, as Ruggles (2011) has stated, we are “running round in the same circles” rather than extending and furthering our subject. Ruggles’ comment had led her to investigate how well established archaeoastronomy actually is within the field of archaeology: has it become mainstream? In the first instance, she summarised her results gathered from a questionnaire survey that included TAG participants. Core findings were that the subject itself seems to be accepted and seen as important, but that the teaching and therefore inclusion of such material in a set archaeology curriculum seems to be considered unnecessary. However, the ongoing presence of skyscape archaeology at meetings similar to TAG has led to some promising developments; see for example the BAJR guide, *Archaeoastronomy for Archaeologists* (Conolly 2016). Henty further pointed out that we have indeed started extending the field and are breaking out of our circles, as evidenced through the launch of the now well-established *Journal of Skyscape Archaeology* and regular skyscape sessions in both astronomy and archaeology meetings in the UK.

Following on from this analysis of the research discipline itself, Darrelyn Gunzburg (UWTSD) elaborated on Ursa Major, the Great Bear, and stellar time-telling in the fresco scheme within the first floor of the Palazzo della Ragione in Padua, Italy. Gunzburg describes in her work how bears were viewed in the late medieval era as more than representing hot-tempered qualities, and following her previous connection of these frescos with stellar constellations (Gunzburg 2013), she compared the depiction of bears in the fresco with the temporal orientation of the constellation of Ursa Major. Revealing the altered orientation over the year, she linked this with the location of the bears in the overall fresco. Apart from this fascinating stellar connection, she also emphasised how such interpretation illustrated the continuing practice of time-telling by the stars (Hannah 2009, 14) into the late medieval era.

This time theme, spanning millennia, is also furthered by Pamela Armstrong’s (UWTSD) work on mid-Holocene skylscapes in southern England and Wales, which is informed by the idea that megalithic monuments are more than crude manipulations of material, but rather visualise ideas about the world, especially the passage of time. The orientations of prehistoric structures were analysed in her preliminary dataset, as collected from literature; she was especially interested in whether the changes in the time theme during the mid-Holocene in this region would show in her orientations. Even though she has not yet taken cultural contexts into account, she presented an initial report on how such change in seasonal affiliation existed in such visualisations.

Moving from specific case studies, Daniel Brown (Nottingham Trent University) elaborated upon the theoretical concept of skyscape, its interpretation and definition. Similar to Cristofaro, he engaged deeply with phenomenological approaches, but for the contemporary period. However, his work is theoretical and draws strongly on the concept of unresolved dialectic, as proposed by Smithson (1996 [1968]) in his Site / Non-Site work. Brown’s presentation challenged the sometimes simplistic interpretation of

skyscape, and took his initial dialectic landscape definition (Brown 2016) further, leading to a fuller skyscape experience. He stressed how skyscape lives in the undefined; it is a theoretical concept that one can only investigate from a personal perspective. As such its exploration, visualisation and even definition are fully invested within non-linearity, temporality and negotiations between limiting cases. His final statement replaced the idea of a conclusion with a blur and intentional state of confusion. The audience became part of the elaboration, fully embodied in the idea of the unresolved, and was now primed to explore what is skyscape, what cannot be skyscape and what is neither or both at the same time.

After the previous purely theoretical paper, Bernadette Brady, Darrelyn Gunzburg and Fabio Silva (all UWTSO) moved us back into the medieval period, reporting on their ongoing research on Welsh monastic skylscapes, here focusing upon a solar discourse of the Welsh Cistercians. Their theoretical and methodological background was firmly placed at capturing a holistic impression of each site individually, and it was therefore interdisciplinary and included anthropology, archaeoastronomy, art history and medieval architecture. Their deep approach to individual sites was well presented through their interpretation of orientations of the abbeys in light of local architecture and horizon. The orientations were not presented using the usual curvigrams or overall averages, but by tabulating each site and presenting the ranges of alignments. With this approach, interpretative themes that ring true for specific sites could be more easily established. One example was the re-evaluation of the building sequence of “abbey” versus “cloister” for these sites. Their findings illustrated the impact skyscape archaeology can have in so far unconnected subject areas – in their case Cistercian studies.

John Grigsby (University of Bournemouth) presented on astronomical imagery in myth and ritual sites. In his work, he fully conveys the aspects of skylscapes as outlined by Silva and Brown alike. He also goes deeper into time and deals with visualisations of skyscape through “shaping mythology” (Bradley 1998) in the Neolithic and Bronze Age. Motivated by the successful interpretation of Bronze Age Scandinavian art, he asked whether there is a mythology informing iconography in the British Isles. He started by introducing the Irish myth of the “rescuer of the Sun”, whose obscene gestures free the Sun from its winter imprisonment – this was linked beautifully with the stars in Orion’s Belt as well as the Milky Way. The inclusion of precession in Grigsby’s work was an outstanding example how this effect can lead to more than just the tweaking of alignment azimuths, and results in creating distinct stellar narratives. Grigsby further pointed out how until 2000 BC the stars of the Southern Cross were visible in the British Isles and can be tied into a stellar narrative. His proposed narrative was then applied to explain the appearance of lozenge symbols found on female figurines and megalithic art. This was then further extended to possibly inform seasonal celestial drama visualised through ceremonies in the landscape.

The final paper, given by Frédéric Heller (Service Public de Wallonie) and Georg Zotti, ended the presentations as they began, by embracing landscape modelling and GIS. For their case-study they explored the alignments of deep postholes dating from the Early Bronze Age in Linsmeau, Belgium, pointing towards astronomical events. Their

work revealed intriguing postholes 1.4 m deep and far too widely spaced to be part of a building, while the lack of post remains seems out of place considering the context of this site and other shallower postholes. For some, Heller at first inspection proposed solar alignments; however, detailed 3D simulations made at the Boltzmann Institute in Vienna rejected this hypothesis but allowed further investigation of more complex alignments associated with the sky. The authors have proposed several cross-quarter solar as well as lunar standstill alignments in their work; these modelling results form the basis for their hypothesis that these postholes represent an observing site.

Silva drew this session to a close through a roundtable discussion on “Archaeologists versus Archaeoastronomers, or New Best Buddies”. This discussion continued on from the TAG 2014 roundtable that informed archaeologists what archaeoastronomers require from their work, such as a reliable definition of north in site plans as well as a survey of the local horizon. In part, this is what motivated the previously mentioned BAJR guide, *Archaeoastronomy for Archaeologists* (Connolly 2016). Silva now asked what skyscape archaeology can do to engage archaeologists in their work.

At first, the apparent detachment of western culture from the sky was discussed, as to how it presents itself in the field of archaeology and with some participants highlighting the example of Aegean archaeology. They felt that Ruggles’ work, establishing reliable statistical approaches and validity, was relatively new, but their impressions illustrated the need to show how the field has moved on over the past decades and is now closer to a more holistic and deeper skyscape archaeology which tackles issues beyond intentionality and is moving towards meaning.

A way forward was indicated by the call for more collaborations, offered as a chance for archaeologists to engage with skyscape archaeologists and their methodologies. Ultimately, such teamwork would ensure that other archaeologists become more aware of ongoing discussions and methods in skyscape archaeology. Furthermore, it would also spread expertise within the skyscape archaeology community into many different areas of interest beyond the most common context of the British Isles.

Overall, this session was an example of how skyscape archaeology engages with visualising skylines in many contexts and manifestations, whether monumental, mythological or conceptual. It showed the power of a holistic approach that embraces various methodologies, in clear contrast to a pure statistical approach. The author does not recall a single curvigram being presented during the entire session. In addition, the richness of the periods covered is also telling, ranging from the Neolithic, through the medieval and arriving at the contemporary epoch. This illustrates how rich and active the field of skyscape archaeology is in itself; breaking out from our usual circles occurred most strikingly in presentations from archaeologists outside of the skyscape archaeology field who have embraced the subject, as exemplified by Grigsby’s work as well as Heller’s. The presenters also sensed through their work a call for more collaborations, through the unexpected impact Brady, Gunzburg and Silva’s work on the Welsh Monastic Skyscape Project has had on the community of Cistercian researchers.

Thanks went to University of Southampton for hosting the session and to Liz Henty and Fabio Silva for their hard work in organising the day-long meeting. All the presented

papers were of a high standard and the detailed Q&As engaged the audience, making this session intriguing and inspirational. The day ended with participants still engaged in discussions over innovative insights into skylscapes and their visualisation. These thoughts will find their way to publication as an edited volume in the future that will outline the final verdict of this meeting: we truly are not running around the same circles anymore.

## References

- Bradley, R., 1998. *The Significance of Monuments*. London and New York: Routledge.
- Brown, D., 2016. "The Experience of Watching". *Culture and Cosmos* 17(2): 5–24.
- Campion, N., 2012. *Astrology and Cosmology in the World's Religions*. New York: New York Press.
- Connolly, D., 2016. *Archaeoastronomy for Archaeologists*. BAJR Guide 43 [online]. Accessed February 2017 [www.bajr.org/BAJRGuides/43\\_ArchaeoAstronomy/43\\_ArchaeAstronomy.pdf](http://www.bajr.org/BAJRGuides/43_ArchaeoAstronomy/43_ArchaeAstronomy.pdf)
- Darvill, T., 2015. "Afterword: Dances Beneath a Diamond Sky". In *Skyscapes: The Role and Importance of the Sky in Archaeology*, edited by F. Silva and N. Campion, 140–148. Oxford: Oxbow Books.
- Gunzburg, D., 2013. "Giotto's Sky: The Fresco Paintings of the First Floor Salone of the Palazzo De laRagione, Padua, Italy". *Journal for the Study of Religion, Nature and Culture* 7 (4): 407–433. <https://doi.org/10.1558/jsrnc.v7i4.407>
- Hannah, R., 2009. *Time in Antiquity*. London and New York: Routledge.
- Parker Pearson, M., 2012. *Stonehenge*. London: Simon and Schuster.
- Ruggles, C. L. N., 2011. "Pushing Back the Frontiers or Still Running around the Same Circles? 'Interpretative Archaeoastronomy' Thirty Years On". In *IAUS 278 Archaeoastronomy and Ethnoastronomy: Building Bridges between Cultures*, edited by C. L. N. Ruggles, 1–18. Cambridge: Cambridge University Press. <https://doi.org/10.1017/s1743921311012427>
- Smithson, R., 1996 [1968]. "A Provisional Theory of Non-sites". In *Robert Smithson: The Collected Writings*, 364. Berkeley: University of California Press.
- Stellarium, 2016, Stellarium 0.15.1 [online]. Accessed March 2017 <http://stellarium.org>
- Witzel, E. J. M., 2012. *The Origins of the World's Mythologies*. Oxford: Oxford University Press.