

Whither skyscape archaeology?

Fabio Silva

Department of Archaeology & Anthropology, Bournemouth University

fsilva@bournemouth.ac.uk

For the last ten years, I have taught a postgraduate distance-learning archaeoastronomy module at the University of Wales Trinity Saint David (TSD), part of the Sophia Centre's Master of Arts (MA) programme in Cultural Astronomy and Astrology. Having completed the module in its first intake in 2008, I was brought in as an assistant to Kim Malville and Nick Campion, who ran it, and a few years later I became the module leader. The module complemented the wider offering of the MA, which largely focused on historical and anthropological approaches to cultural astronomy broadly defined. Simply titled *Archaeoastronomy*, the module focused on teaching basic orientation surveying methods using a compass and clinometer and the barebones of what celestial objects such as the Sun and Moon do in the sky throughout the year(s) – the two essential elements that are brought together in any archaeoastronomical research project. These were then supplemented by a roster of worldwide case studies, largely taken from the plethora of fieldwork and publications done by Kim Malville in his extensive career.

In tandem, I was starting a career in archaeology as a postdoctoral researcher at the Institute of Archaeology of University College London, essentially retraining from a background in theoretical physics. This dual life, mostly lived within one of the largest archaeology departments in the world, quickly led me to believe that the “doom and gloom” that archaeoastronomers cast on archaeologists was ill-attributed. I found archaeologists to be largely open-minded and welcoming of other ideas; so long as they are sound, well-argued and backed by solid data. This, I quickly realised, was a key part of the problem: archaeoastronomers, as Ruggles put it (2011), have been at a theoretical and methodological standstill for forty years; whereas archaeology continued to evolve and mature, embracing other approaches and collecting data from new sources. It rapidly became clear to me that change was needed.

<2> Looking Back

In 2015 the TSD module was revamped to become known as *Skyscapes, Cosmology and Archaeology*. This brought it in line with the skyscape archaeology approach that effectively and publicly launched that year with the release of *Skyscapes: The Role and Importance of the Sky in Archaeology* (Silva and Campion 2015), as well as the *Journal of Skyscape Archaeology* (Silva and Henty 2015). The module's curriculum was completely redesigned to fall in line with what, at the time, was perceived to be the goal of skyscape archaeology: to bring archaeoastronomy and archaeology together by infusing the latter with much needed archaeological and anthropological theory and open it up to other ways of doing archaeoastronomy.

The module was taught over the course of eight weeks (table 1), and its main learning outcome, which carried over from its ancestor module, was to train students to do a research project in archaeoastronomy, including simple fieldwork and data analysis. Rather than focus on showcasing case studies from around the world, the teaching focused on contextualising skyscape research within the framework of both archaeoastronomical and archaeological theory.

Week	Topic	Example of Reading Material
1	The Sky in Archaeology	Hutton 2013
2	Skyscapes	Silva 2015
3	Archaeology and Cosmology	Johnson 2010
4	How the Sky Moves	Ruggles 2015a

5	Theory & Method	Iwaniszewski 2011
6	Fieldwork	Prendergast 2015
7	Identification and Interpretation	Hayden and Villeneuve 2011
8	Themes in Skyscape Research	Ruggles 2015b

Table 1 – Part of the curriculum of the *Skyscapes, Cosmology and Archaeology* module at TSD 2015-2020.

As can be seen from table 1, astronomy (“how the sky moves”) and fieldwork – the two topics that are almost exclusively taught in archaeoastronomy courses (for example Magli 2016) – were but two links in a much wider chain that took students through the history of the appreciation of the sky with respect to the archaeological record, through the theories and methods of archaeology, the role of cosmology in archaeological thinking, theory and method in skyscape research and finally the perils and pitfalls of interpretation.

Assessment was done in two parts. The first task was a short essay comparing and contrasting two opposing interpretations of the same structures – for example Ghezzi and Ruggles (2011) contra Malville (2011) on Chankillo in Peru. No single true answer was expected, rather students were encouraged to think about and contextualise each scholar’s approach within the wider archaeoastronomical (brown vs green) and archaeological (processual vs postprocessual) theoretical frameworks. This was to test whether students grasped the nuances of theoretical thinking and could readily observe how theory influences the choice of methodology, analysis and interpretation – a key principle that any mature field of study needs to acknowledge but that is, sadly, missed by most of my archaeoastronomy colleagues. The second task was centred around a small piece of research in which we encouraged students to include fieldwork. As the MA is distance-learning, the Sophia Centre attracts students from all over the world, and this meant that we had students doing research projects in almost every continent – often researching the orientation of structure(s) close to their home, though not always.

Module students went on to do MA dissertations on the topic of skylscapes, some of which have been published (Cristofaro 2020; Lomsdalen 2014; Sticker-Jantscheff 2018), attend and present at international conferences (both archaeoastronomical and archaeological) and carry on their research elsewhere. One of the most significant reasons why the module worked so well was that students would come and tackle archaeoastronomy already having a solid background in the humanities provided by the other foundational modules of the MA. This created enriching research experiences that transcended the traditional boundaries of archaeoastronomy.

However, this was also restricting in two ways. Firstly, with so much material (both archaeological and astronomical) to cover in eight weeks, it was impossible to delve deep enough into the archaeological and anthropological background. To tackle this, I decided to carefully choose and curate the archaeological and anthropological literature that students were exposed to. Often, I chose readings stemming from these fields, rather than archaeoastronomy, especially when topics or contents covered similar ground. The second restriction was that most of the students came to the MA with an interest in history or anthropology and were not necessarily numerate or interested in the more quantitative aspects of archaeoastronomy. This provided challenges but also opportunities. It required me to develop some user-friendly data-analysis tools that helped non-numerate students do fieldwork and get sensible results without having to know the full technical details of coordinate transformation, atmospheric refraction and the like – a solution that proved quite popular. But it also meant that it was impossible to introduce more advanced quantitative concepts, such as statistical tests and other data analysis methods, to the module.

Overall, I consider the TSD experiment to have been largely successful in showing that another archaeoastronomy is possible, one that is more solidly rooted in the humanities and pays particular attention to theory and methodology. However, the *Skyscapes* module is now going to disappear, being merged with another in a reshaping of the entire MA as the university prepares to adopt 30-credit modules. Where, then, should archaeoastronomy go next?

<2> Looking Ahead

At present there are two directions that are being developed by colleagues. The first direction is to teach archaeoastronomy as a branch of cultural astronomy, as it has been at TSD, whereas the second is to teach it as a field of its own. The programmes in Oklahoma and Honduras, for postgraduates and undergraduates respectively, as well as the Massive Online Open Course run by the University of Milan, are representative of the latter. A third direction is however missing; and that is for archaeoastronomy to be taught as part of an archaeology degree – which is a shame since this is what Ruggles did at the University of Leicester in the 1990s but this, sadly, was not continued after his retirement.

I believe that skyscape archaeology requires representation at the undergraduate level, not as its own programme, but within archaeology degrees. This is the only way to ensure that future generations of archaeologists will become aware of skyscape research and the role skyscapes play for past societies, thus creating a future where the gap between the fields is non-existent. Such undergraduate provision must be complemented by a more detailed postgraduate programme where the theoretical and methodological detail should be taught, in essence training graduates to become skyscape archaeologists. I believe that this should take the form of a Master's programme, similar to that at the Sophia Centre, but built on a solid archaeology foundation, with a side of anthropology and history. In other words, this programme should be formed within an archaeology department and should actively target archaeology graduates rather than just amateurs or enthusiasts.

Such a programme cannot focus exclusively on archaeoastronomy. Firstly, because archaeoastronomy is an incredibly narrow field, both theoretically and methodologically, there would not be enough material to teach an entire master's programme on this topic without resorting to case study showcasing, which completely misses the point of a Master's degree. Secondly, if archaeoastronomers want to capture the attention of archaeologists then they need to engage with the considerably vaster field of archaeology, in all of its forms. This requires paying close attention to developments in the field over the last fifty years and learning from them. For example, most archaeology graduates already have a background in surveying, and to a much greater extent than the majority of archaeoastronomers. Measuring orientations with compass, clinometer and even theodolite is *passé* – often necessary, I admit, but outdated nonetheless. Modern archaeologists are already quite used to surveying structures using a variety of far more robust and accurate techniques, including non-invasive methods, laser scanning and drones. Data routinely gathered by archaeologists, with the help of Geographic Information Systems which are an essential tool of the modern archaeologist, can be used to extract any orientation one wishes, to degrees of accuracy and measures of uncertainty that are largely unavailable to archaeoastronomers. Despite this, such approaches are practically non-existent within archaeoastronomy. Therefore, a key goal of skyscape archaeology, and a challenge to be met by the curriculum of a Master's degree, is to embrace these new forms of survey and find ways to integrate and analyse such datasets.

Furthermore, archaeoastronomy has always shared a lot in common with landscape archaeology (Ruggles 2011). The research questions are often the same: whether or not there are patterns; whether they are intentional; what they meant and what place they had in wider belief-systems and

ontologies. Where the two fields diverge is in their theory and methodology, but that's only because archaeoastronomy has never embraced the humanistic, postprocessual approaches of the late 1980s and 1990s nor the computational, spatial analysis revolution of the late 1990s and 2000s. Skyscape archaeology is ready to embrace these and I believe the ideal scenario is for a joint postgraduate degree that teaches landscape and skyscape archaeology in tandem. This way the two can learn from each other: the diversity of methods used in landscape archaeology can seep into archaeoastronomy, whereas the relevance of the skyscape can be learnt by the archaeologists.

The curriculum of such a degree should span the range of theoretical and methodological approaches that are employed in both fields: from the humanistic to the scientific; from postprocessualism to spatial analysis; from case studies of different perspectives and alternate ontologies to bespoke statistical tests and immersive 3D models; from the topographic to the celestial. Of course, specific astronomical content is an absolute necessity – archaeologists like most modern westerners do not know how the celestial objects move, nor are they aware of the limits of visibility of celestial objects, whether today or in the past. There are also methodological nuances to employing probabilistic and spatial analysis to skyscape data that would need to feature in such a programme.

The creation of such a curriculum would not be without its challenges. Instead of delivering content that has been countless repeated in archaeoastronomy conferences and courses for the past forty years, this programme would force those delivering it to think differently – like an archaeologist – and even to do the groundwork in employing new theoretical perspectives and developing new methodological tools. But these challenges are golden opportunities for the field to mature epistemologically and which, if dealt with properly, would narrow, if not completely remove, the gap with archaeology – leading towards a true skyscape archaeology. They also have the potential to be quite attractive for students, who will feel that they can contribute to an evolving field, rather than simply be recipients to an age-old and worn out methodology.

This is the direction I see skyscape archaeology taking: one where it becomes recognised as a sub-discipline of archaeology. A future where skyscape archaeologists, rather than working in isolation, collaborate with their archaeological colleagues and actively contribute to cosmological and ontological debates of relevance to the wider archaeological community. A future where skyscape archaeologists present their research in archaeological conferences and publish it in archaeological journals, while still holding smaller conferences and workshops to debate and push forward the theoretical and methodological boundaries of their field. A future where they are involved in the life of archaeological departments, playing an active role in teaching, research and professional practice. Any alternative to this is to continue to live in isolation from archaeology and such an insular culture is responsible for most, if not all, of the problems archaeoastronomy faces today.

<2> References

- Cristofaro, I., 2020. "When the Sun meets Okeanos: the glitter path as an eschatological route from Late Bronze Age to Archaic Greece". *Journal of Skyscape Archaeology* 6(1): [this issue](#).
- Ghezzi, I. and C.L.N. Ruggles, 2011. "The Social and Ritual Context of Horizon Astronomical Observations at Chankillo". *Proceedings of the International Astronomical Union* 7(S278): 144-153. DOI: 10.1017/S1743921311012567
- Hayden, B. and S. Villeneuve, 2011. "Astronomy in the Upper Palaeolithic?" *Cambridge Archaeological Journal* 21(3): 331-55.
- Hutton, R., 2013. "The Strange History of British Archaeoastronomy". *Journal for the Study of Religion, Nature and Culture* 7(4): 376-396.

- Iwaniszewski, S., 2011. "The Sky as a Social Field." *Proceedings of the International Astronomical Union* 7(S278): 30-37. DOI: 10.1017/S1743921311012440
- Johnson, M., 2010. *Archaeological Theory*. Chichester: Wiley-Blackwell.
- Lomsdalen, T., 2014. *Sky and Purpose in Prehistoric Malta: Sun, Moon, and Stars at the Temples of Mnajdra*. Lampeter: Sophia Centre Press.
- Magli, G., 2016. *Archaeoastronomy: Introduction to the Science of Stars and Stones*. New York: Springer.
- Malville, K., 2011. "Astronomy and Ceremony at Chankillo: an Andean Perspective". *Proceedings of the International Astronomical Union* 7(S278): 154-161. DOI: 10.1017/S1743921311012579
- Prendergast, F., 2015. "Techniques of Field Survey." In *Handbook of Archaeoastronomy and Ethnoastronomy*, edited by C.L.N. Ruggles, 389-409. New York: Springer.
- Ruggles, C.L.N., 2011. "Pushing back the frontiers or still running around the same circles? 'Interpretative archaeoastronomy' thirty years on." *Proceedings of the International Astronomical Union* 7(S278): 1-18. DOI: 10.1017/S1743921311012427
- Ruggles, C.L.N., 2015a. "Basic Concepts of Positional Astronomy." In *Handbook of Archaeoastronomy and Ethnoastronomy*, edited by C.L.N. Ruggles, 459-472. New York: Springer.
- Ruggles, C.L.N. (ed), 2015b. *Handbook of Archaeoastronomy and Ethnoastronomy*. New York: Springer, ch. 1-20.
- Silva, F., 2015. "The role and importance of the sky in archaeology: an introduction." In *Skyscapes: The Role and Importance of the Sky in Archaeology*, edited by F. Silva and N. Champion, 1-7. Oxford: Oxbow Books.
- Silva, F. and N. Champion (eds), 2015. *Skyscapes: The Role and Importance of the Sky in Archaeology*. Oxford: Oxbow Books.
- Silva, F. and L. Henty, 2015. "Editorial". *Journal of Skyscape Archaeology* 1(1): 1-7. DOI: 10.1558/jsa.v1i1.26951
- Sticker-Jantschkeff, M., 2018. "A New Look at Old Temples: Augusta Raurica and its Skyscape in the First and Second Centuries AD". *Journal of Skyscape Archaeology* 4(1): 52-81. DOI: 10.1558/jsa.34976