

Book Review

Clive Ruggles and Amanda Chadburn, *Stonehenge: Sighting the Sun.*

Liverpool University Press on behalf of Historic England, 2024. Hardcover, 232 pp. ISBN-13: 978-1802074673. USD \$57.44.

Gail Higginbottom

Instituto de Ciencias del Patrimonio (INCIPIT)

The authors, Clive Ruggles and Amanda Chadburn, rightly state that "Stonehenge has been a source of wonder and speculation from the moment the stones were erected in the middle of the 3rd millennium BC." Eminently readable and highly accessible, this volume examines the underlying celestial design concepts for Stonehenge and other monuments in the Stonehenge Landscape through the available physical evidence. It also brings together some of the more pertinent recent archaeological research. Altogether, these various forms of evidence help to reveal how ancient peoples understood celestial phenomena and what role the sky likely played in their cultures.

This book also carefully critiques speculative or unsupported theories, focusing on evidence-based interpretations. In these ways, the authors challenge overly simplistic or speculative claims, such as those portraying Stonehenge as purely an "observatory" or an advanced computational device and critiquing earlier works like that of Hawkins, who depicted Stonehenge as a prehistoric computer. Ruggles and Chadburn suggest such theories may impose modern scientific paradigms on ancient practices. They highlight the importance of adopting a more nuanced perspective, considering Stonehenge as part of a broader cultural and ritualistic landscape, rather than isolating its purpose solely to astronomical observations.

The volume has three sections. The first begins with Barry Cunliffe's foreword, providing an overview that emphasizes the volume's significance. The remaining two subsections of Part 1 include the Preface, which outlines the book's purpose and approach, followed by the acknowledgements. The second section contains eleven core chapters covering various aspects of Stonehenge and its surroundings. The third section contains the appendices.

This book effectively combines archaeological analysis, archaeoastronomy, and cultural history to investigate potential astronomical alignments and the meaning of Stonehenge and its neighboring sites, in ancient and modern contexts. It includes explanations and definitions covering the nature of archaeoastronomy to ensure what proceeds is fathomable. The archaeoastronomical discussions and explorations of the Stonehenge area are supported by the glossary and extended definitions ("Explainer" section) in the appendices and the supplementary online materials, including explanatory photographs plans and technical data. This additional information is particularly beneficial for readers who wish to delve deeper into the evidence surrounding Stonehenge's function(s) rather than solely relying on expert conclusions regarding their analyses, much of which is typically not found in the same publication. The detail in the supplementary information in particular is an excellent resource and is regularly updated as new information comes to hand.

More specifically, the methods and evidence used includes: (1) Archaeoastronomy: celestial alignments, such as solstitial sunrise and sunset positions, to explain the intentionality behind the construction of Stonehenge and related monuments; (2) Archaeological Data: excavations, radiocarbon dating, and analysis of structures such as Woodhenge and Durrington Walls are used to reconstruct the historical context (e.g. from as the Stonehenge Riverside Project); (3) Ethnoastronomy and Cross-Cultural Comparisons: they draw parallels to other societies, such as the Mursi, who used celestial phenomena to mark time and inform rituals (Turton and Ruggles 1978); (4) Historical Analysis: a review of interpretations from Antiquity to the present is conducted, evaluating theories ranging from astronomical observatories to ritualistic purposes; (5) Integration of archaeological data from other scholars and institutions, including radiocarbon dating and LIDAR imagery, and partnerships with Historic England and Bournemouth University where the LiDAR-based imagery is used to enhance the visual understanding of Stonehenge's landscape; (6) Technical Analysis: use of advanced models for celestial observation and tools. They use software programs to generate horizon profiles to visualize astronomical behavior in relation to horizon topography. Using these tools they also create 3D landscape panoramas surrounding their target sites. These incorporate digital versions of archaeological features, like the Southern Circle and its avenues at Durrington Walls, whilst also removing modern obstructions, such as roads; (7) Historical Literature: reviews interpretations from the 17th century through contemporary

scholarship, critically engaging with earlier theories from figures like Stukeley, Hawkins and Thom.

Ruggles and Chadburn demonstrate that incorporating archaeological *and* astronomical data improves our understanding of the World Heritage Site (WHS) in terms of its landscape *and* astronomical aspects. What the more secure dates and clearer landscape topographies add to the astronomical debate is a greater and more accurate understanding of the travels of the Sun and the Moon at the times of the monuments' creation, as well as where the celestial bodies would appear to rise and set along the horizon, in relation to the sites' positions. Including the structures within the digital landscapes means that the authors now have more powerful and precise information to create new suppositions about the areas' cultural astronomical connections. Thus Chapter 7 reveals the *astronomical* conclusions for the WHS that appear to have some certainty about them, along with offering other researchers' theories and concepts regarding other possibilities but which may be controversial (See Box 7.1). The tangible evidence of the principal orientation of each monument (central axis or well-marked axis at right angles to the main one for two cases) led Ruggles and Chadburn to accept eight intentional sightlines from five monuments. Whilst refraining from spoiler alerts about which sites these might be and which parts of the monuments contain evidential celestial alignments, broadly the targets are the Sun at various times of solstices and the Moon at its most extreme rising and setting points.

Chapter 10 emphasizes how recent dating has improved social archaeoastronomical interpretations of the WHS, in particular those related to the longevity of the use of sightlines as well as the comparative use of the same between sites through time. The two most striking examples are: (i) despite the fact that the dates for the construction of the timber sun-sighting monument at Woodhenge (c. 2600 BC, *forthcoming*, in Chapter 6) likely overlaps those for the earliest erection for the stones at Stonehenge (c. 2575 BC, Chapter 5, endnote 5), astronomical sightlines at Woodhenge were *possibly* operable for a few generations only (q.v. Chapter 6) whilst those of Stonehenge were perhaps 'in operation' for half a millennia; (ii) these dates, together with those highlighted for earlier sites, like the wooden structure of Godmanchester (3685–3365 cal BC; 5050-4850 B.P.) draws attention to the likely longevity of the use of sight-lines through time across Britain (q.v. Higginbottom and Clay 2016).

As pointed out, Ruggles and Chadburn argue that Stonehenge's purpose was likely multi-faceted, involving both celestial alignments and ritualistic use. In the final chapter, the authors conclude that Stonehenge was (i) built to sight to the Sun at the solstices and likely connected to concepts of death (of the old season or yearly cycle) as well as rebirth and renewal (new season), (ii) where a variety of ceremonies could have taken place, with rituals changing and developing over time, (iii) where rituals kept everything functioning and in harmony, and (v) where rituals, and the monument itself, were possibly adapted to reflect changes and beliefs in society. At this point, more discussion about the Moon was expected, given that we see the use of ethnographic information within the volume relating to lunar rituals. The latter, combined with the information on Bronze Age artefacts, may allow for more reflective conclusions.

Whilst Ruggles and Chadburn focus on astronomical significance, a closer interpretive consideration of how such elements influenced or were woven into social or political roles would have been of interest to readers despite the speculative possibilities of these interpretations. Such interpretations can be presented as theories for testing. So, whilst the book presents and discusses various evidence, a deeper level of integrative interpretation would have been welcomed. Given the nature of the volume, though, there was likely a deliberate choice to focus on what we can more assuredly know to date.

There are several clear and attractive illustrations, especially the informative composite images, like Figure 3.5 and several supportive illustrations in Chapter 10. However, in the online or digital versions of the book (epub or pdf), where you would expect to be able to zoom in to investigate images at a higher resolution, the images just become blurry (a publisher issue). In the printed volume itself, the beautifully photographed or digitally created landscapes are not large enough to see any informative detail (again, a publisher issue). Nevertheless, the supplementary material is very helpful for technical images and astronomical landscape reconstructions, for these are reproduced with high resolution and are eminently usable.

Unashamedly positivist in the first steps taken to carry out and understand potential astronomical interests of past cultures, this book also connects to several 19th & 20th-century philosophical lineages (which already had long traditions, Johnsen & Olsen 1992) that have woven their way in and out of anthropology and geography eventually making their way into archaeology over time and in turn shaping contemporary thought. Primarily,

most of these grew out of the *Interpretative Tradition*, moving through several philosophers to Droysen's 19th-century assertion that the only appropriate approach to history is a *hermeneutic one* relating the whole and its parts, that is *context* (Johnsen and Olsen 1992, p. 421). In Archaeology, *hermeneutics* was initially linked to *Historicism* (e.g. Collingwood's *The Idea of History*, Gadamer's *Truth and Method* 1960) and instigated the 'phenomenological movement' in Archaeology. Interestingly, as Davidson points out (1986), Husserlian phenomenology and naked-eye astronomy are fundamentally linked, both provide real-world, experiential understandings. Husserl used earth-centered astronomy (as opposed to the solar-system model) to show that phenomenological studies must consider 'experience from the subjective or first person point of view', accentuating that it is *the context* or our contextual relations with things, that is critical and all-pervasive to that subjective experience (Higginbottom 2020). In both cases, people are at the literal centers of their own World as seen from Earth; primarily based upon vision and the imagery of the surrounding celestial dynamics. Thus, by default, archaeoastronomy, and this book, are phenomenological studies of past peoples.

Ruggles and Chadburn's book would be beneficial for teaching undergraduate introductions to archaeology, archaeoastronomy, and cultural history. Its interdisciplinary approach also makes it useful for courses that aim to bridge the gap between science and the humanities. Studying these integrative methods would be useful to understand how these disciplines can be combined to offer a more comprehensive interpretation of ancient sites in a readable format. As the book provides practical examples of analyzing ancient monuments with modern technology, these can be directly applied to classroom settings, connecting to potential hands-on technical classes like site surveying or software tools. Most particularly, Chapter 3 can serve as excellent foundational reading for courses on archaeological methods or archaeoastronomy, for it explores the relationship between architecture and astronomy. *Sighting the Sun at Woodhenge and Durrington Walls* (Chapter 6) is helpful reading for courses examining ancient sites relating to the broader landscape, as well as those exploring the functional and symbolic roles of monuments, and is beneficial for teaching about the cultural significance of celestial alignments. *Pushing Stonehenge Astronomy to the Limit* (Chapter 9), is helpful for exploring advanced and possibly controversial interpretations of sites by encouraging critical thinking and engagement with contemporary debates. Chapter 10 situates Stonehenge within a broader network of prehistoric sites across Britain, in particular exploring the broader religious and ritualistic context of celestial alignments at related Neolithic sites, suggesting

that the celestial alignments were deeply symbolic rather than purely functional. Thus it provides inter-connective considerations for the above courses. Whilst not taking away anything from the volume itself, the European prehistoric examples of structures tend to be rather few, broad-brushed and general, lacking locational or cultural information, and, for reasons such as these, perhaps the volume is more suited to undergraduates than postgraduate research students studying comparative connections. The European artefact discussion in Chapter 11, though, is a welcome addition.

The book clearly sets the stage for further research and is a volume to which people can refer back to compare and contrast future research done at the World Heritage Site. With its data-driven frameworks, including supplementary online materials and detailed data, it encourages future scholars to build upon its findings, encourages computational tool usage and fosters constructive debate and refinement of interpretations in the field. Nevertheless, due to the mystical allure of the main site itself, along with the book's readability and lack of complex language, it is also for non-specialists and non-academics. Stonehenge is, as the authors themselves have pointed out, an ongoing source of wonder, and this book helps to spark new questions and delight in the endless quest to understand the past. Thus, local and community libraries would do well to obtain this book. It is sure to be a favorite.

By providing imaginative reconstructions, the book allows readers to contemplate the awe and wonder that ancient people might have felt while observing the sky and come to an understanding of how these celestial objects might have shaped their rituals. It also illustrates the long-term connection between the Sky and Human Experience. Such approaches enable readers to shift their understanding of ancient peoples from those distant others to people like themselves. In this way, it also prompts readers to think about our modern detached relationship with the sky, hopefully renewing a curiosity within readers about the natural rhythms that still shape our lives today. Thus, Ruggles and Chadburn have unwittingly addressed the pleas of Husserl (1934), Davidson (1986) and Turrell (2017), encouraging humanity to reconnect to the beauty and majesty of the sky so that we come to know our own World, the peoples of the past and each other.

In essence, the joy of the book comes from both its intellectual stimulation and the opportunity to reconnect with the wonders of ancient human achievements. It bridges the gap between modern science and the awe that the cosmos once inspired. This work holds

the promise of changing how people view the World, by making them more appreciative of the deep, ancient connections between humanity and the sky.

References

- Collingwood, R. G. (1946). *The idea of history*. Oxford University Press.
- Davidson, N. (1986). *Astronomy and the imagination: A new approach to man's experience of the stars*. Routledge and Kegan & Paul.
- Gadamer 1960 (1989). *Truth and method*. (trans. by W. Glen-Doepel, ed. by J. Cumming & G. Barden), revised translation by J. Weinsheimer and D.G. Marshall, Crossroad.
- Husserl, E. (1934). Over-throw of the Copernican system in the usual ideological interpretation. The original-ark earth does not move' in M. Merleau-Ponty *Husserl at the limits of phenomenology* (Eds. L. Lawlor with B. Bergo). Northwestern University Press.
- Johnsen, H. & Olsen, B. (1992). Hermeneutics and archaeology: On the philosophy of contextual archaeology. *American Antiquity*, 57(3), 419–436.
<https://doi.org/10.2307/280931>
- Higginbottom, G. & Clay, R. (2016). Origins of standing stone astronomy in Britain: New quantitative techniques for the study of archaeoastronomy. *Journal of Archaeological Science: Reports*, 9: 249–258.
<https://doi.org/10.1016/j.jasrep.2016.05.025>
- Higginbottom, G. (2020). Perception creates worlds. In L. Solling, R. Parkes, C. Gant-Thompson, & D. Tybussek. *Yachay Wasi*. BAR 2962. Archaeopress: Oxford, 115-127.
- Turrell, J. (2017). *You who look* (Art + Film Los Angeles County Museum of Art.
<https://www.youtube.com/watch?v=kUtf7KkKRmM>. q.v. Higginbottom, G. 2024 (in preparation for volume) Invoking mystical light, in Linda Schädler and Adrian Hug, *James Turrell. Light in space and prints*.
- Turton, D. & Ruggles, C. (1978). Agreeing to disagree: The measurement of duration in a southwestern Ethiopian community. *Current Anthropology* 19, 585–600.