

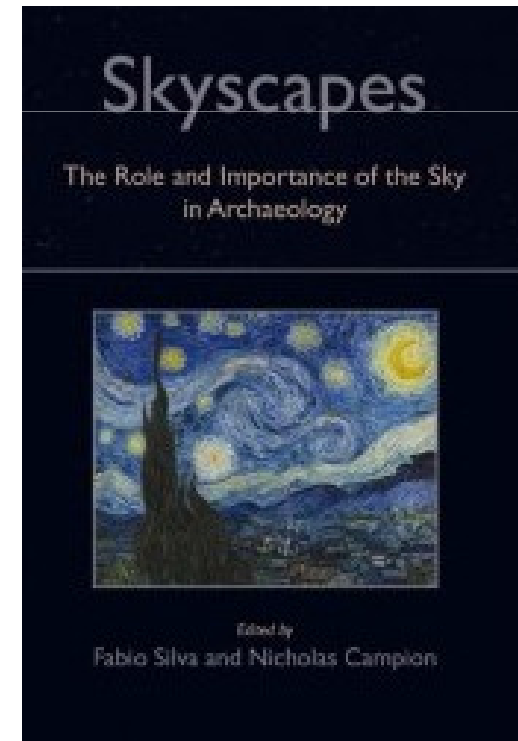


Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

SKYSCAPES, ARCHAEOLOGY AND COSMOOLOGY

Introduction

Nick Champion



Cosmology

'We don't live beneath the sky. We live within it.'

- Gavin Pretor-Pinney, 'Cloudy with a Chance of Joy', TED talk, June 2013,
- https://www.ted.com/talks/gavin_pretor_pinney_cloudy_with_a_chance_of_joy?language=en
- See transcript at https://www.ted.com/talks/gavin_pretor_pinney_cloudy_with_a_chance_of_joy/transcript?language=en

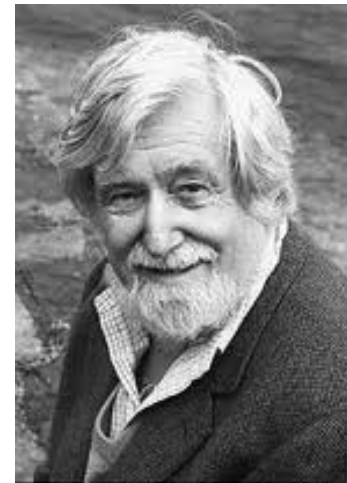


Welcome to Ancient Religion

Students: what is religion?

- ‘A religion is a system of symbols which acts to establish powerful, pervasive, and long-lasting moods and motivations in men by formulating conceptions of a general order of existence and clothing these conceptions with such an aura of factuality that the moods and motivations seem uniquely realistic’.
- Geertz, Clifford. 1973. *The Interpretation of Cultures*, New York: Basic Books, p. 90.

You all know by now that there is no settled
Definition of what a religion is!



Welcome to Ancient Religion

Students: religion and space

- ‘Religion, in its physical presence, social orderings, and cultural forms, is a consequence of spatial practice, though it is the attribution of meaning that gives such practice its character as “religious”’.
- Knott, Kim, *The Location of Religion: A Spatial Analysis*, Durham: Acumen, 2013, p. 43.
-



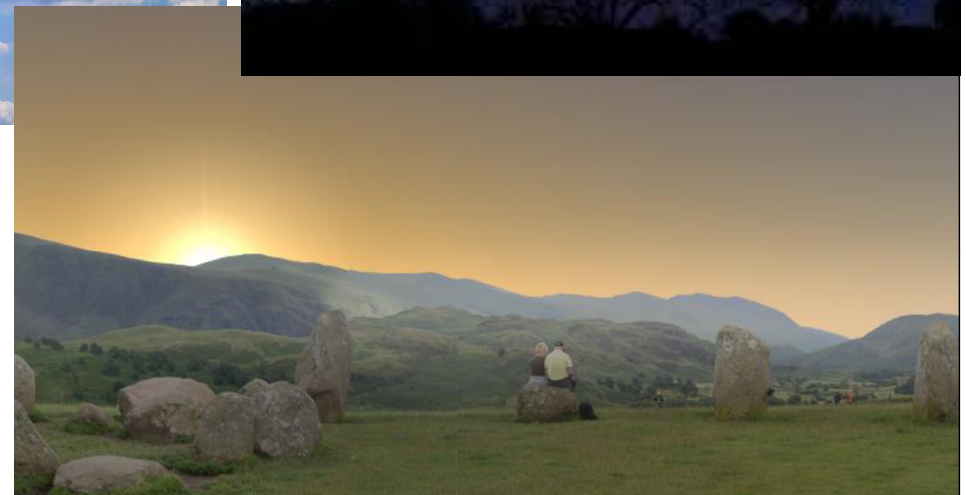
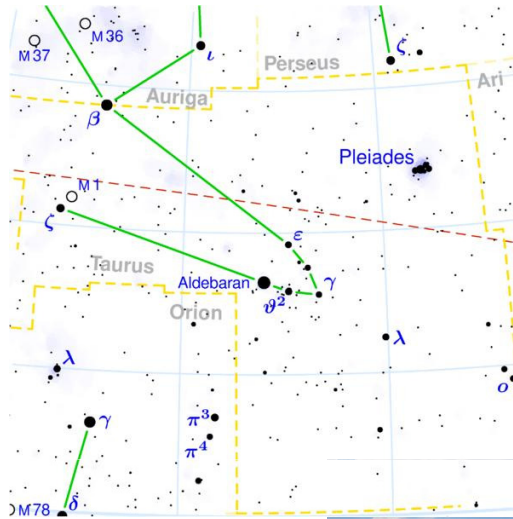
The Built Environment: Religious Space and Power: the Pantheon, Rome, St Peter's Rome, St. Paul's, London: solar symbolism, easterly alignments, celestial domes.



Global Contexts: Burma: the Shwedagon Pagoda,
Rangoon, Moon shrine (photo Nick Campion 1987)



What do we see when we see the sky?



Cultural perceptions: how do we see the sky? Bright points or black spaces?



© 1986 Jerry Lodriguss and John Martinez

This week



The purpose of this presentation:

To consider the development and current debates within archaeoastronomy with attention to political questions and semantics.

My own core field is the History of Ideas

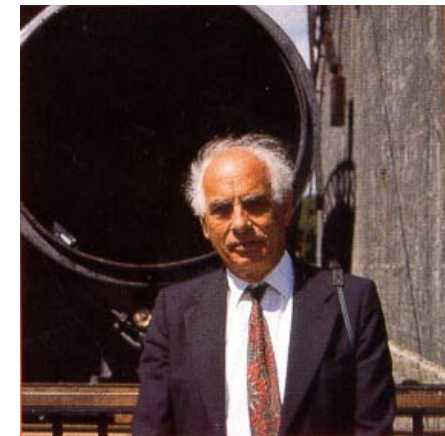
Ideas about what archaeoastronomy and culture are shape the questions that are asked and the methodologies used.

Can culture be understood separately to the sky?

- **‘the sky played a key role in the whole system of ancient people’s ideas of nature and society. ... In ancient men’s notions of celestial bodies and laws of their transit[s], links of their cosmic and terrestrial rythms [sic], positive knowledge and mythology are inseparable. **Not a single ancient culture can be understood without studying all of these notions...**’**
- D.S. Raeovsky, "Ancient astronomy as the mirror of the history of culture." *Astronomical and Astrophysical Transactions* 15, no. 1-4 (1998): 299-305.

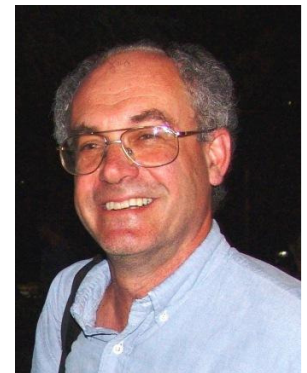
Can culture be understood separately to the sky? 2

- ‘long before the invention of writing or the construction of observing instruments, **the sky was a cultural resource** among peoples throughout the world’.
- Clive L.N. Ruggles and Michael Hoskin, *Astronomy before History* in *The Cambridge Concise History of Astronomy*, Michael Hoskin, ed. (The Press Syndicate of the University of Cambridge, 1999), p. 1.
- A BOLD CLAIM



Can culture be understood separately to the sky? 3

- **‘The sky is of universal importance. Cultural perceptions of the sky are vital in fulfilling humankind’s most basic need to comprehend the universe it inhabits, both from a modern scientific perspective and from countless other cultural standpoints, extending right back into early prehistory.** They form a fundamental sect of people’s conceptions of their own cultural identity. Developing an understanding of these perceptions is **a crucial component** of Western anthropologists’, archaeologists’ and historians’ efforts to **comprehend human conceptions and actions both in the past and in the present’.**
- Ruggles, Clive, ‘Pushing back the frontiers or still running around the same circles? ‘Interpretative archaeoastronomy’ thirty years on’, in Clive Ruggles (ed.), *Archaeoastronomy and Ethnoastronomy: Building Bridges between Cultures*, Proceedings of International Astronomy Union Symposium 278, (Cambridge: Cambridge University Press, 2011), p. 15.
- RUGGLES APPLIES HOSKIN’S BOLD CLAIM TO ACADEMIA



Can culture be understood seperately to the sky? 4

- ‘Researchers who have made a study of past cultures’ interest in and conception of the heavens have often treated the topic narrowly, rather than in the context of the entire culture...**to truly comprehend a culture we must have some sense of its cosmology – the group’s conception of themselves in relation to the heavens.’**

- Gumerman and Warburton in John W. Fountain and Rolf M. Sinclair, ed., *Current Studies in Archaeoastronomy: Conversations Across Time and Space* (North Carolina: Carolina Academic Press, 2005), p.15.
-

Can culture be understood separately to the sky? 5



- **‘the practice of observing and making sense of celestial phenomena is as much a cultural activity as any other, and consequently it is equally sensitive to the varied processes of culture change.’**
- Anthony Aveni, *Foundations of New World Cultural Astronomy*, (Colorado: University Press of Colorado, 2008), 726-727.
- It’s not just that the sky influences culture, but that the way we see the sky influences culture. Is there a feedback loop in which culture influences the way we see the sky and the way we see the sky then influences culture?

Archaeoastronomy Definitions: questions and issues

- Archaeoastronomy is the study of *beliefs* and *practices* relating to the sky **in the past**, especially in prehistory, and the **uses** to which people's knowledge of the skies **was** put (my emphasis).
- Clive Ruggles,
<http://www.cliveruggles.net/>
[accessed 8 December 2009].
-

The study of the astronomical practices, celestial lore, mythologies, religions and world-views of **all ancient cultures** we call archaeoastronomy.

We like to describe archaeoastronomy, in essence, as the '*anthropology of astronomy*', to distinguish it from the 'history of astronomy' (my emphasis).

- The Centre for Archaeoastronomy,
http://terpconnect.umd.edu/~tlaloc/archastro/cfaar_as.html, accessed 8 December 2009.
-

Definitions: questions and issues

Ethnoastronomy: the study of 'ethnic' astronomy

Astroarchaeology: a minority term. According to Anthony Aveni it refers specifically to the analysis of astronomical alignments without any cultural investigations. Aveni, Anthony, 'The Unwritten Record' in Anthony Aveni (ed.), *Foundations of New World Cultural Astronomy: A Reader with Commentary*, Denver: University Press of Colorado, 2008, pp. 1-11 (p. 3).

Cosmology in Culture: recognises limitations inherent in the words astronomy and astrology?

Anachronism

- The use of the terms archaeoastronomy and cultural astronomy lead us into cultural complexities.
- The distinction between the words astronomy and astrology in pre-modern and non-western cultures is anachronistic.
- Anachronism is a historical term applied to the inappropriate projection of concepts from one culture on to another, such as from modern, western culture on to pre-modern and non-western culture

THE POLITICS OF KNOWLEDGE

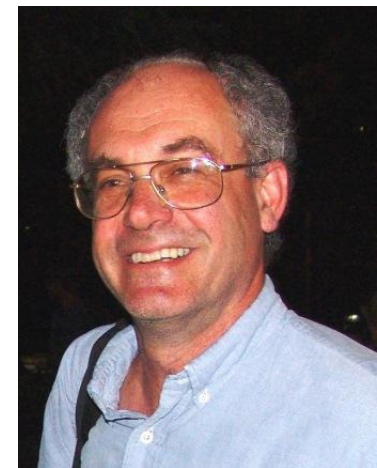
archaeoastronomers complain that archaeoastronomers consider archaeology, but that astronomy is ignored by archaeologists

- `Archeoastronomers.... have explored the subject by trying to identify archeological features... in relationship to celestial events and processes. Anthropological archaeologists on the other hand, ...often completely ignore the entire concept of cosmology and the role of celestial phenomena`.
- Gumerman, George J., and Miranda Warburton, 'The Universe in a Cultural Context: An Essay', in Fountain, John W., and Rolf M. Sinclair (eds.), *Current Studies in Archaeoastronomy: Conversations Across Time and Space*, Durham NC.; Carolina Academic Press, 2005, pp. 15-24.

THE POLITICS OF KNOWLEDGE

Why do prehistorians ignore astronomy? They have other priorities?

- ‘It is not that prehistorians are unaware of it. The stark fact is that astronomy is not at the top of most of their agendas.’
- Clive Ruggles, *Astronomy in Prehistoric Britain and Ireland* (Yale: Yale University Press, 1999), p. 2.

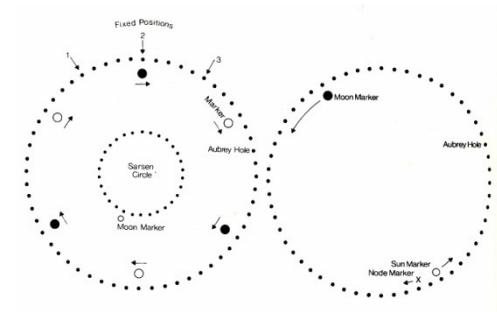


Different kinds of Knowledge

- 'No evidence exists for the use of stone circles as mathematical computers or for any other scientific purposes. Rather, the evidence can be economically explained as relating to the construction of simple calendars to aid the timing of rituals and the regularisation of the seasons'
- (Timothy Darvill, Prehistoric Britain, London and New York, Routledge, 1987, p. 97).
- The question is how one understands the construction of a calendar. Does a simple calendar still require a 'computer' and mathematics?

Clive Ruggles: Moving away from statistics to an understanding of symbolism

- ‘Ironically in view of the ‘science v. symbolism’ debates in archaeoastronomy in the early 1980s, answers are not to be found by searching for proto-Western science but in the very symbolism that was once seen as its antithesis. If we see non-Western systems of thought as substituting (superstitious) myth, ritual and ceremony for (rational) explanation, we fail to recognize that the conceptual structures underlying them themselves constitute mechanisms for explanation that are perfectly logical and coherent in their own terms. Correspondences such as that between the Barasana Caterpillar Jaguar constellation and earthly caterpillars, have explanatory power within a non-Western world-view, and symbolic expressions of such correspondences – such as that between quartz and moon-light – possess the power to express perceived reality in such a framework’.[\[1\]](#)
- [\[1\]](#) Ruggles, Clive, *Astronomy in Prehistoric Britain and Ireland*, New Haven and London: Yale University Press, 1999, p. 155.



- It was rapidly realised that the study of presumed ancient astronomical alignments in ancient monuments (archaeoastronomy) contained serious weaknesses.
- When looking back at previous societies, especially those without a written record, it was realised that it is not enough to identify astronomical alignments.
- The idea developed that it is necessary to identify intentionality: was the alignment actually intended by the original builders.
- It was therefore necessary to identify wider cultural frameworks, drawing on whatever other evidence is available, such as written texts, where available (as in Egypt or Mesoamerica), or ethnography.

Cultural Astronomy

- ‘With an ever-increased focus on the development of astronomy in the context of the culture in which it is embedded, archaeo- and ethnoastronomy have now merged under the more aptly descriptive new name of “cultural astronomy”’.
- Aveni, Anthony, ‘The Unwritten Record’ in Anthony Aveni (ed.), *Foundations of New World Cultural Astronomy: A Reader with Commentary*, Denver: University Press of Colorado, 2008, pp. 1-11 (p. 3).



ARCHAEOASTRONOMY

The development of the discipline

- Various origin points are discerned:
- 1. 1600s survey of Stonehenge by Inigo Jones
- 2. 1890s/1900s Norman Lockyer's surveys in Egypt, Greece and Britain
- 3. 1960s Gerald Hawkins and Alexander Thom.
 - Best sources for the history of archaeoastronomy
 - John Michel: *A Little History of Archaeology*: especially good on the earlier periods
 - *Clive Ruggles: Astronomy in Prehistoric Britain and Ireland*, chap 1: essential for the 20th century.
- Continuity over the entire period is now being demonstrated by Liz Henty, UWTSD PhD student

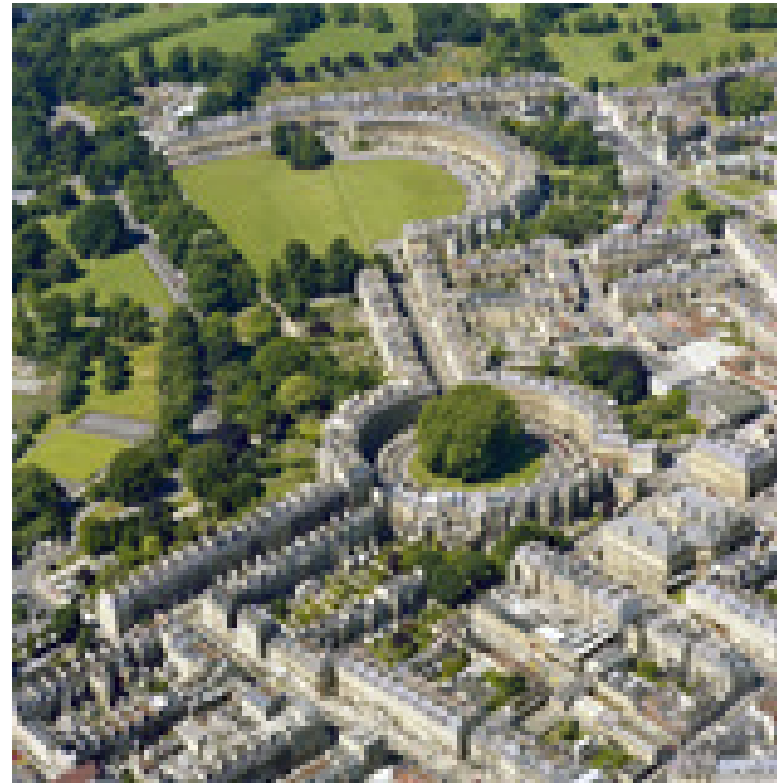
Archaeoastronomy: the development of the discipline- the 17th and 18th centuries

- Inigo Jones
- 1573-1652
- Introduced Palladian architecture to England
- Surveyed Stonehenge
- Conclusion: it's a Roman Temple
- Bottom right: the Whitehall Banqueting Hall, London (England's first (major) Palladian building, Inigo Jones, 1619).
- Asserts England's Roman heritage



Cutural Consequences: Inigo Jones and Bath

- Circus and Royal Crescent
- The Sun and the Moon
- Probable connections with masonry
- Anthony Thorley



John Aubrey

- John Aubrey
- 1626-1697
- The Aubrey Holes
- Druids (didn't publish – only in notebooks)
- Antiquarianism



William Stukeley

1687-1765



- Solstice Sun at Stonehenge
- Druids
- Descendants of Semites
- Protestant ascendancy
- The Druids, Stukeley claimed, were descendants of the Hebrew patriarchs (e.g. Abraham and Isaac).
- Therefore he asserted 17th century England's religious lineage back to the ancestors of the Christians, rather than to the corrupt Roman Catholic church.
- Context:
- 1689: the Catholic Stuart king James II was expelled. The Protestant Dutch ruler became king William III.
- 1714: the protestant Hanoverian ruler became king George I in order to prevent the Catholic Stuart heir becoming king.
- 1745-6: the rebellion of Bonnie Prince Charlie (Stuart, Catholic, grandson of James II) was defeated.

Cutural Implications: Stukeley and the Druids

- First Druid order founded by John Toland 1717
- Right: "Arch-Druid in his full Judicial Costume" etching from [Charles Knight](#), *Old England: A Pictorial Museum* (1845)



Stonehenge, Druids, Summer Solstice

left 1923, right 2005



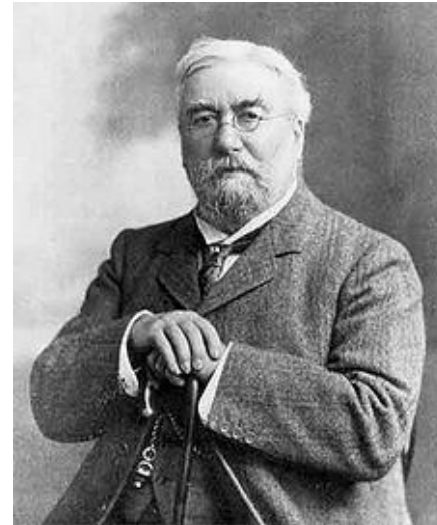
Cultural Applications

- The stone circle at the Glastonbury Festival site.
- A place for relaxation and ritual



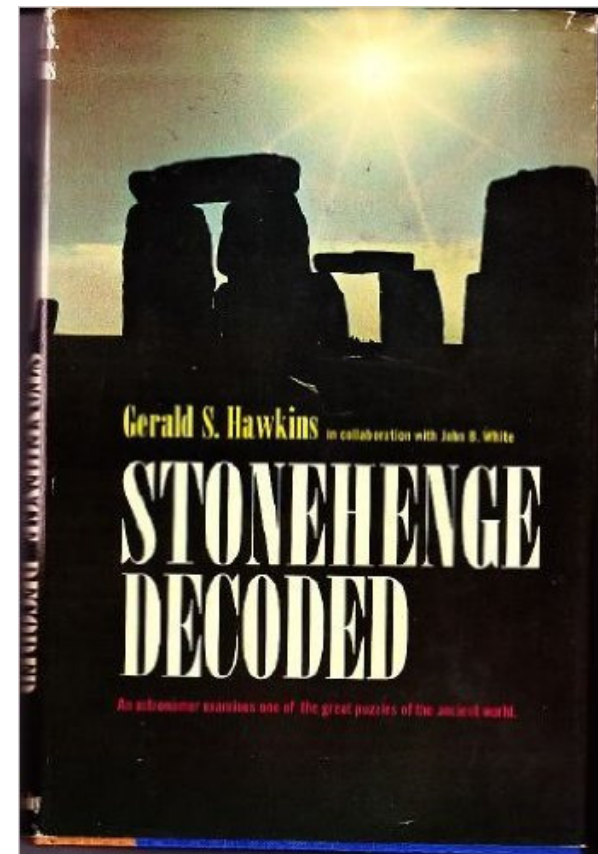
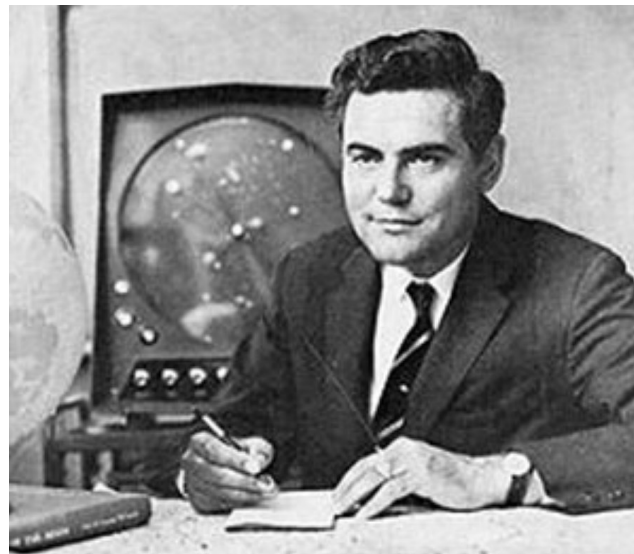
Archaeoastronomy: the 20th century

- Norman Lockyer
- 1836-1920
- 'The Dawn of Astronomy'
- Studied Egyptian and Greek Temples
- Esp, rising of Pleiades
- First example of stellar alignments
- Dated Stonehenge to 1500 BCE
- Brings ancient knowledge to the British Isles: Britain shares in Egyptian and Greek knowledge and achievement



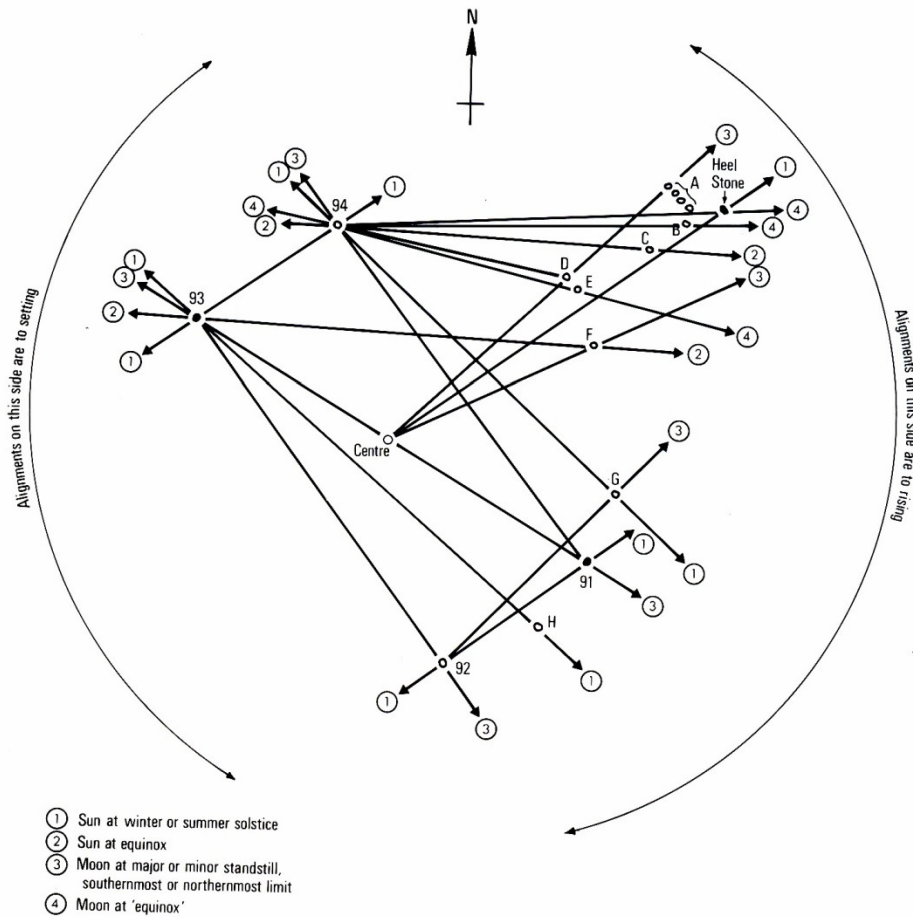
Archaeoastronomy: the 1960s

- Gerald Hawkins
- 1928-2003
- Aubrey Circle = eclipse predictor



Hawkins' alignments

1 = solstice sun; 2 = equinox sun. 3 = lunar standstills; 4 = equinox moon



197 Sun and moon alignments in features of Stonehenge I and II, according to Hawkins. He finds many more alignments than Newham, but at some expense: the scheme involves all the holes A to H, plus the geometrical centre, at which no stone or hole is known to have existed; and it introduces moon 'equinoxes'.



Archaeoastronomy: the 1960s

- 1894-1985
- Megalithic sites characterised by precise alignments
- Lay-out of stone circles according to set designs.
- Conclusion that there was a sophisticated culture.
- *Megalithic Sites in Britain*
- *Megalithic Lunar Observatories*

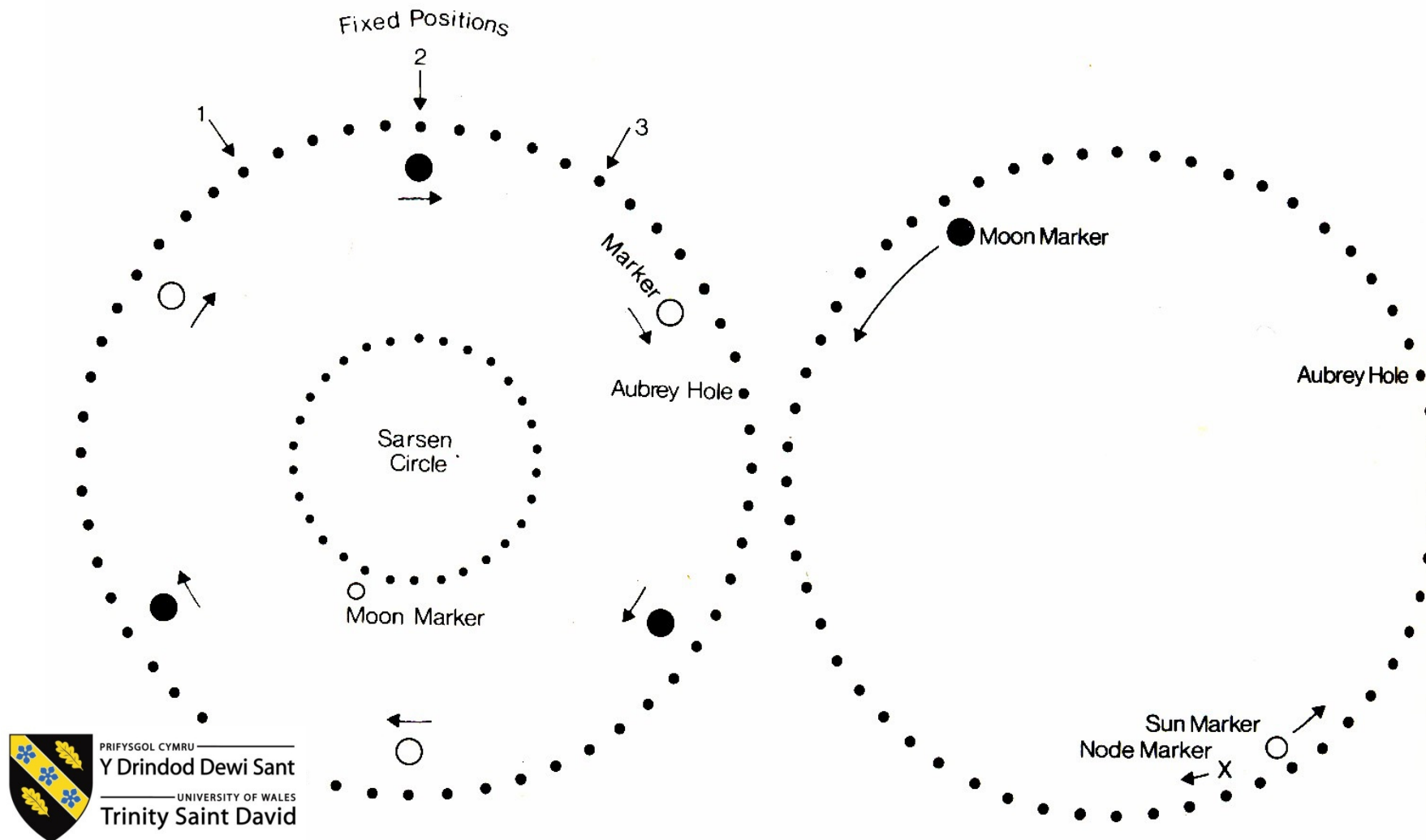


Archaeoastronomy: the 1960s

- Fred Hoyle
- 1915-2001
- Confirmed Hawkins eclipse-predictor theory
- Stonehenge builders = NASA astronauts
- Ancient Britons = scientists
- Science/astronomy has a claim to great antiquity



Hawkins eclipse predictor (left) and Hoyle (right)



Stonehenge and culture

- By the late 1960s we have two Stonehenges
- 1. The alternative Westminster Abbey
- (1a conservative Druids, 1b radical pagans, 1c New Age, 1d extraterrestrial theorists etc)
- 2. An ancient scientific observatory
- And that's before we consider it as a tourist site, an archaeological site, a heritage site etc.

Stonehenge Dates: changing theories

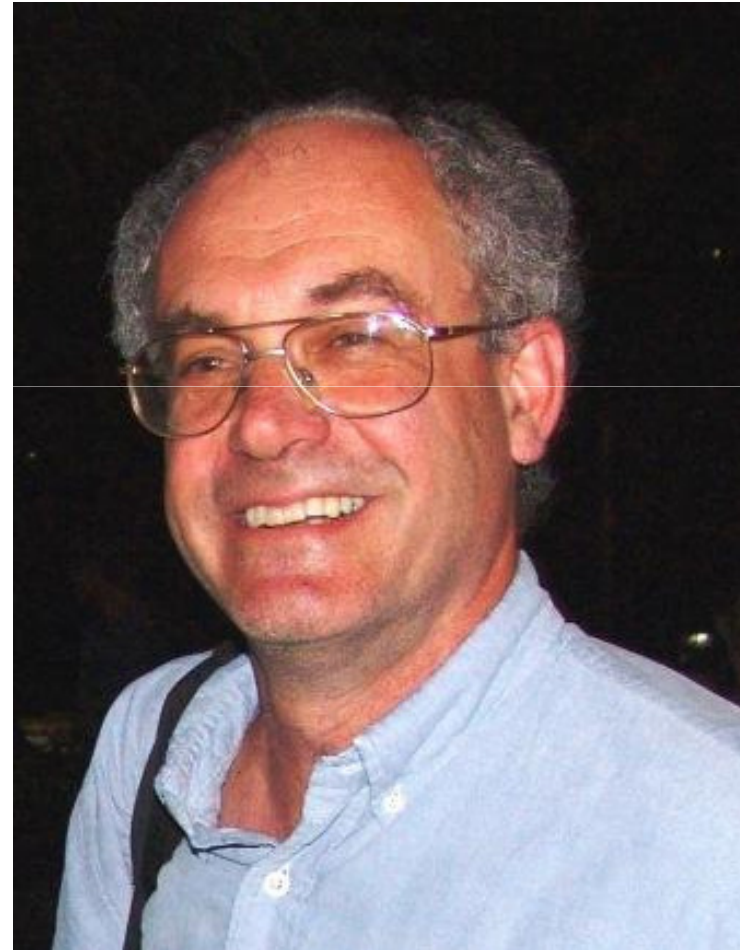
- 'Archaeologists had believed that by the time the Romans arrived in Britain, Stonehenge was just a towering enigma, its ritual importance entirely forgotten.'
- The latest finds imply a much more complex story: they include a Roman coin among stone fragments, suggesting the Romans also believed in and sought out the healing magic. The later charcoal deposits suggest to Darvill and Wainwright annual gatherings, perhaps for feasting and ceremony at the winter solstice, continuing as late as the 17th century.
- The modern-day druids and pagans who assemble bearing green boughs for the winter and summer solstices may not be so far off the mark after all.'
- <http://www.guardian.co.uk/science/2008/sep/23/archaeology.heritage>

The discipline splits

- 1970s/80s
 - 1. One group, or network, gradually rejected Hawkin's and Thom's theories concerning precise alignments, and aspired to develop a rigorous, interdisciplinary approach, organised through the 'Oxford' conferences, later SEAC and ISAAC, the Archaeoastronomy journals.
 - 2. One group, or network, holds on to Hawkins and Thom, argues from the a priori assumption that there was a lost golden age of sophisticated science, or which ancient monuments are the visible legacy. At one extreme this group includes advocates of extra-terrestrial visitation. We could call this group 'Alternative' or 'Fringe' if it were not for the loaded implications of these words. This group tends to regard the proponents of rigour as responsible for suppressing knowledge. Like group (1) this has its own networks – see for example 'Megalithomania'

Clive Ruggles

- Responds to the archaeology v astronomy dispute
- Trained both as physicist (at Cambridge – Critiqued the elaborate claims of Thom/Hawkins in order.
- Made archaeoastronomy easier for archaeologists to accept.



Debate: Academic Disagreement

- Geoffrey Wainwright (left) and Timoth Darvill 'are convinced the stone chips are evidence of belief in the healing power of the 'blue stones''.
- Mike Parker-Pearson (Sheffield U) says Wainwright and Darvill's theory lacks any evidence



Resources: Online in the UWTSD Library



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Journal of Skyscape Archaeology

Latest Issue: Vol 1, No 2 (2015) 

Co-Editors
[Fabio Silva](#)
University of Wales Trinity Saint David
University College London

[Liz Henty](#)
University of Wales Trinity Saint David

The Journal of Skyscape Archaeology (JSA) is concerned with the role and importance of the sky in the interpretation of the material record. Currently, elements of this study can be found separately in the disciplines of archaeoastronomy, archaeology, cultural astronomy, anthropology and history. *JSA* brings them together under the aegis of a new academic journal in order to promote cross-fertilization towards an understanding of the cosmologies of the societies who constructed and used the rich archaeological heritage we study today. Consequently *JSA* encourages articles that consider the relationship between material culture, the sky and society, from a wide range of disciplines. By bringing together current worldwide research, regardless of period or culture, *JSA* provides a shared interdisciplinary forum for skyscape archaeology.

Recently, with the rise of interpretative archaeologies, cosmology and ideology have taken a central role in the interpretation of the archaeological record. Landscape archaeology, for example, has become concerned with exploring the relationships between sites and the landscapes in which they are situated. Archaeoastronomers are also starting to move away from simple alignment identification towards interpretations that take the landscape and the wider archaeological context into account. Skyscape Archaeology bridges the gap between the two fields to provide interpretations which are more far-reaching. *JSA* creates a space for this multidisciplinary theme by persuading archaeologists to expand their horizons and take the sky into account as another “-scape”, as well as encouraging archaeoastronomers to ground their interpretations on the material record. This much needed mutual exchange will foster multidisciplinary collaborations, further research and debate, as well as methodological innovation.

JSA is an international peer-reviewed journal which publishes a variety of articles. These include Theory & Methods Articles dealing with methodological and theoretical aspects of the discipline; regular Research Articles which are generally research question or case-study driven; Forums, where an important question for debate is discussed and followed by a series of short responses from different scholars; and Reprints of key papers in the discipline's history with new commentaries by modern authorities. Book and Conference Reviews will also be published and potential reviewers should contact the Editors prior to submitting a review. Potential contributors should consult the Journal's Guidelines which can be found on the "For Authors" page above.

Publication of the *Journal of Skyscape Archaeology* has been aided by a Grant from the [Sophia Centre for the Study of Cosmology in Culture](#), School of Archaeology, History and Anthropology, University of Wales Trinity Saint David

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