

# BOOK OF ABSTRACT

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AND NORTHERN EUROPE



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# Stonehenge: Sighting the Sun and Moon(?)

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*keywords:* Stonehenge, major lunar standstill, landscape, skyscape, sightlines

## ABSTRACT

This keynote discusses the latest book published in May 2024: *Sighting the Sun* (Liverpool University Press for Historic England).

Stonehenge is one of the most famous ancient monuments in the world and its solar alignment is one of its most important features. Yet although archaeologists have learned a huge amount about this iconic monument and its development, a sense of mystery continues about its purpose. This helps fuel numerous theories and common misconceptions, particularly concerning its relationship to the sky and the heavenly bodies. A desire to cut through this confusion was the inspiration for this book, and it fills a gaping hole in the existing literature.

The book provides both an introduction to Stonehenge and its landscape and an introduction to archaeoastronomy—the study of how ancient peoples understood phenomena in the sky, and what role the sky played in their cultures. Archaeoastronomy is a specialism critical to explaining the relationship of Stonehenge and nearby monuments to the heavens, but interpreting archaeoastronomical evidence has often proved highly controversial in the past. *Stonehenge: Sighting the Sun* explains why. It makes clear which ideas about Stonehenge are generally accepted and which are not, with clear graphics to explain complicated concepts.

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# Symbols and Stones: exploring theory and meaning of Neolithic astronomy

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*keywords:* symbol, Avebury, Sun, Moon, theory

## ABSTRACT

This paper will consider the role of theories and concepts in skyscape archaeology. It will examine the meanings attached to the word symbol as applied to sites considered significant in skyscape archaeology. This word is often used but not defined.

For example, Clive Ruggles (1999, 155) argued that, if we could only understand the astronomical symbolism at Neolithic monuments we would understand the cosmology of the period on its own terms, free from modern preconceptions. Lionel Sims and David Fisher (2017: 23) talk about the Moon's complex cycles, including its reappearance following a period of invisibility at dark Moon, which they interpret as a 'resurrection' which, in turn, comprises part of a 'symbolic repertoire (which) is more suitable for a cosmology that requires contradiction and complexity rather than the one-dimensional Sun'.

Altogether Sims and Fisher speak of symbolic loading, symbolic structure and symbolic repertoire, but they do not define 'symbol'. The Greek verb *ballo* means 'throw'. The Greek preposition 'sun' (sometimes Romanised as 'syn') means with, or together with, so literally 'throw together', but also to 'collect' and 'compare' (Ladner 1979, 223). As Peter Struck (2004, 78) writes, in its earliest meaning 'a symbol is one half of an object – usually a piece of cloth, wood, or pottery – that is deliberately split into and then allocated to the parties to an agreement. It is reassembled at a later time to verify the deal'. Behind the symbol, he continues, is therefore the notion of agreement and therefore a symbol was originally social.

A symbol is, for Deleuze and Guattari (1988: 130), actually a kind of sign, in a chain of signification, of the endless connections between multiple signs: 'every sign', they write 'refers to another sign, and only to another sign, ad infinitum' and 'all signs are signs of signs' while a symbol exists 'in a constant movement of referral from sign to sign'.

The paper will take these discussions and apply them to the neolithic sites of southern Britain, such as the Avebury complex. It will conclude that it is necessary to understand the ways in which concepts are used in order to understand Neolithic astronomy.

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# Skyscapes of Callanish I: A Virtual Experience

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## ABSTRACT

Among the many megalithic sites in Britain, Callanish I (in English) or Calanais I (in Scottish Gaelic) on the Isle of Lewis is one of the oldest, largest and most iconic. It consists of a 13 m circle of menhirs, 3-4 meters high, surrounding a central slab (4 m) and a cairn set between the circle and the centre menhir. Radiating rows of stones form a cross shape with an “avenue” formed by two parallel stone rows towards the north-by-eastern direction, and much shorter rows closely towards the other cardinals.

The orientation of the double stone row forming the avenue (azimuth 191°) has been interpreted in connection to the Lunar Major Standstill setting (e.g., Ponting and Ponting 1981, Curtis and Curtis (2003)).

In 2005, Rennie commissioned Carty to take a laser scan of the stones. We have recently converted this to a 3D scenery for Stellarium (Zotti et al., 2021) to explore the views of the lowest Moon seen from the end of the avenue and elsewhere around the stones. The scanned area did not include the rocky outcrop that dominates the southern horizon right behind the stones (Ponting and Ponting 1981). We therefore have added commercial digital elevation data to our 3D model and started to carefully align the laser scan model against this.

Our present work with the virtual model demonstrates that the avenue appears to point towards the highest rock of this outcrop, and the lowest Moon can be observed to hide behind it and later reappear (see Figure 1) between the stones before finally setting. This application also allows us to re-investigate the recent work by Higginbottom & Mom (2023/24).

A final round of ground truthing (Reijs 2023) has still to wait for fair weather. A preliminary scenery can meanwhile, and hopefully our final model later in 2024, be studied in an accurate simulation in the Stellarium desktop planetarium, making this the first open-access 3D scenery of a site of archaeoastronomical relevance made available for Stellarium (Callanish3D 2023)

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# Orientations of the cairns and other adjacent structures of the Giants' Churches

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*keywords:* Neolithic, Giants' Churches, cairns, solar orientations, lunar orientations

## ABSTRACT

The Neolithic (ca. 3200–1800 BCE) Giants' Churches (hereinafter the GCs) are amongst the largest megalithic monuments of Northern Europe. These megastructures, built by the seal-hunting hunter-gatherers of Ostrobothnia, were originally located on the coast, usually on small outcrops, islands and peninsulas, but are nowadays located 10 to 35 km inland due to the post-glacial rebound phenomenon.

The GCs were built of stones of varying sizes in rakka boulder fields. Most of them are rectangular. In their walls the GCs have openings, "gates", and most of them have adjacent stone structures such as cairns, standing stones, rakka pits or large boulders either inside of them, as part of their walls, or in the immediate vicinity. Many GCs have nearby housepits and other signs of human activity (see Figure 1).

The original function of the GCs is not known. The prevailing hypothesis is that they were communal monuments used for gatherings and ritual activities – some of them even possibly for warfare (see Okkonen 2003: 220–6; Sipilä & Lahelma 2007; Ridderstad & Okkonen 2021). It has also been suggested that some of them were ritualized remains of former dwelling sites (Ridderstad 2015a).

The hypothesis of the ritual connection for the GCs is supported by archaeoastronomical studies, which have shown that the axes and gates as well as some of the cairns of the GCs were oriented towards solar and lunar events (Ridderstad 2013; Ridderstad 2015b; Ridderstad & Okkonen 2021). In this study, the cairns, standing stones and other stone-built features of especially the largest GCs were examined and shown to have orientations to both solar and lunar events. As a special case, the orientations of the triangular formations of cairns (see Figure 2), which appear to have had a special significance in the ritualization of certain types of GCs, were analyzed. It was found that their orientations often replicated some of the key orientations of the very largest GCs. The results obtained strengthen the hypothesis of the GCs as ritualized structures of former sites of hunter-gatherer activity.

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