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## Introduction: Cultural Astronomy

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*What astronomy is not an astronomy in a culture?*

Michael Hoskin<sup>1</sup>

*Cultural astronomy: the use of astronomical knowledge, beliefs or theories to inspire, inform or influence social forms and ideologies, or any aspect of human behaviour. Cultural astronomy also includes the modern disciplines of ethnoastronomy and archaeoastronomy.*

Nicholas Campion<sup>2</sup>

Astronomy is more than the science of the stars. It is intimately connected to our ideas of ourselves, our purpose and place in the universe. Currently it is fuelling myths, beliefs and ideologies as much as at any time in its history. We may point to the neo-paganism which draws spiritual sustenance from such sites as Stonehenge. There is the belief in UFOs, borne out of modern science and science fiction, perhaps with ancient roots in angelic and demonic visitations, which in the last decade has exploded in ever more detailed doctrines of alien visitation and abduction. On a more sober level we have the manipulation of the space race to provide propaganda for the cold war. In the post-1989 world the USA continues to use its space programme to reinforce images of the American dream; space has become the new frontier, and 1997's Mars Rover mission was designed to touch down on 4 July, the anniversary of the declaration of independence. George W. Bush's announcement in January 2004 of plans to create lunar colonies and send a manned mission to Mars was an unmistakeable response to the emerging space programmes of countries such as India and, more especially, China. Then there is the social impact of the new cosmology, explored in terms of quantum physics by Danah Zohar and Ian Marshall.<sup>3</sup> If the political impact of Copernicus<sup>4</sup> and Newton's<sup>5</sup> discoveries is now well recognised, then we have hardly begun to question what effect Einstein may have had on twentieth century politics. At least Denis Cosgrove has

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explored the impact of the shock of the first photographs of the earth from space.<sup>6</sup> That's before we consider the archaic survival of ancient ritual calendars which still form the basis of the religious year in all the world's major religions. Even in Christianity, which so prominently rejects its historical links to the sky, with the exception of the Bethlehem star, Christ's birth is still celebrated on 25th December, the Roman winter solstice and feast of Sol Invictus, the unconquered sun god; his resurrection, meanwhile, is commemorated on the first Sun-day following the first full moon after the spring equinox. Such rules may be meaningless to modern church-goers, but are a living legacy of the moral cosmology of the Hebrew prophets of three thousand years ago.

Then there is the question of astrology's popularity which, in the modern west, is as strong as it has been for centuries. Its survival strikes many people as something of a historical problem: how in a modern rational, scientific world could such an irrational, unscientific belief flourish? Given that such words as 'rational' and 'scientific' are highly problematic and open to differing interpretations, astrology's contemporary revival does require study and explanation. Does it represent the late flowering of an outmoded and ultimately doomed superstition or is it, as Bauer and Durant argue, 'part and parcel of late modernity'?<sup>7</sup> Whatever the answer to this question, the study of astrology in its cultural context in the Sophia Centre is explicitly linked to the wider, emerging discipline of cultural astronomy.

### **Cultural Astronomy**

Cultural Astronomy is a recent discipline, defined only in the 1990s. It emerged out of the slightly less recent discipline of archaeoastronomy, the study of the astronomical alignment, orientation or symbolism embodied in (usually ancient) buildings and monuments. Its antecedents may be traced back to the handful of enthusiasts who were fascinated by Stonehenge's possible astronomical function, notably John Aubrey in 1666 and William Stukely in 1724.<sup>8</sup> It was not, though, until the 1860s that Charles Piazzi Smyth began to look further afield and take an interest in the astronomy of the Great Pyramid,<sup>9</sup> and the 1890s-1900s that Sir Norman Lockyer systematically surveyed not just British megalithic sites but Greek and Egyptian temples. Lockyer's work is largely responsible for the idea that it was customary for ancient people to align their sacred monuments with precise solar, lunar and stellar positions.<sup>10</sup> Lockyer, of course was an astronomer, and the archaeologists' generally scathing response to his work began an academic turf war, which continues to this

day, over who has the right to speak for ancient cultures. While Lockyer's views on Egyptian and Greek temples have attracted little attention amongst Egyptologists and classical historians, the continuing arguments concerning megalithic astronomy have essentially focused on competing *a priori* views of ancient culture; archaeologists, whose knowledge of astronomy is often negligible, tend to assume that Neolithic people were by definition unable to perform the intellectual feats which Lockyer ascribed to them while astronomers, for their part, have been accused of ignoring archaeological evidence. However, the whole question of ancient astronomy remained an obscure one until the mid-1960s, when two influential books were published. The first was Gerald Hawkins' 1965 *Stonehenge Decoded*,<sup>11</sup> which claimed that Stonehenge was a giant computer which might be used to predict eclipses. In 1966 the astronomer Fred Hoyle was asked by the archaeological journal *Antiquity* to check (and hopefully refute) Hawkins' eclipse predictor model. Although Hoyle found flaws in Hawkins' model, he instead produced a simpler, more effective, one. Hoyle compared the builders of Stonehenge to NASA scientists, challenging the conventional archaeological idea of Neolithic people as savages.<sup>12</sup> While Hawkins' work attracted wide attention, Alexander Thom's *The Stone Circles of Britain*, published in 1967, caused less of a public stir. It was, though, more difficult for archaeologists to cope with on account of the sheer extent of the precise surveys he used to substantiate his claim that megalithic sites were both laid out according to exact geometrical principles and precise solar, lunar and stellar alignments.

The cultural backdrop to Hawkins' and Thom's books was provided by two distinct cultural currents. First, and most obvious, was the 'space race', which began with the launch of Sputnik in 1957 and then moved via Yuri Gagarin's first manned space flight in 1961 to the Apollo moon landing in 1969. It was therefore natural, if anachronistic, for Hoyle to directly compare the megalith builders to NASA scientists and for astronomers, about to achieve their greatest triumph, to acquire a new set of distinguished ancient ancestors. The second was the social and political revolution of the 1960s: the widespread use of psychedelic drugs from 1965 onwards, the 1967 'Summer of Love' and the political radicalism of 1968, the 'May Days' in Paris and the anti-Vietnam war

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protests. The notion that megalithic culture was highly sophisticated encouraged its adoption as a pre-Christian, pre-scientific, pre-industrial alternative to the supposedly 'alienated' civilisation of the modern west which the disaffected radicals were busily rejecting.<sup>13</sup> From this perspective Stonehenge has become the Westminster Abbey, perhaps the St. Peter's, of New Age, neo-pagan, Wiccan, and alternative and ecological spiritualities, a monument which supposedly recognises humanity's need for harmony with the seasons, sun, moon and stars rather than its dependence on a distant God. The marriage between Thom, Hawkins and the emerging alternative spiritualities was effected by John Michel who, in the late 1960s, was writing, and summarising their new theories, in the pages of *International Times*, the London-based 'underground newspaper'. Michel's *The View over Atlantis*,<sup>14</sup> first published in 1969, is as much the seminal text of modern 'earth mysteries' and sacred geography, as Hawkins' and Thom's work is of archaeoastronomy.

Between them, then, Thom and Hawkins were responsible for the idea that Neolithic Britons were much like modern scientists, with an exact astronomy and precise surveying techniques, rather than stone-age savages. This had three effects:

1. It fed straight into the New Age movement, providing an ancient lineage for ideas of the interdependence of heaven and earth.
2. It presented a major challenge to orthodox archaeologists, overturning (a) views of the Neolithic period as essentially barbarous and (b) the belief that civilisation spread outwards from the Middle East, the 'cradle' of civilisation.
3. It encouraged the study of possible astronomical alignments in other cultures, particularly native American and central American.

Intrigued by astronomical investigations of megalithic sites, working separately to Thom and Hawkins, and attracting far less attention, Alexander Marshak had published his first work arguing for the existence of lunar calendars dating back to 30,000 BCE in 1964.<sup>15</sup> He identified these stone-age calendars in notches on antlers, tusks and bones. Marshak's work attracted little criticism and was largely ignored by archaeologists, but provides the only pervasive material evidence of a culture of astronomy in the late palaeolithic period. It was four years later, in 1968, that the term 'archaeoastronomy' was reputedly coined by Euan MacKie.

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Prompted by the archaeological controversy over Hawkins' and Thom's theories, the Royal Society and the British Academy held a joint symposium in 1972 entitled 'The Place of Astronomy in the Ancient World'.<sup>16</sup> From these and other discussions it soon became clear to the first archaeoastronomers that astronomical evidence alone, was not enough to make a case. For example, questions of intent were raised: if an astronomical alignment is identified at a particular monument, how can it be argued that the alignment was intentional rather than coincidental? Statistics might provide one answer: if a certain number of similar sites indicate similar alignments then it may be reasonably concluded that they were intended by the builders. Yet, a site such as Stonehenge is unique and its purpose might have been different to that of other, smaller circles and may therefore not be susceptible to statistical evidence. Perhaps, then, it was argued, ethnographic and anthropological evidence might provide additional confirmatory evidence for the existence of ancient astronomy. It was in this context, in 1973, that Elizabeth Chesley Baity compiled her extensive survey of all the material published to date on astronomy in ancient cultures (excepting civilisations such as Egypt and Mesopotamia for which the literature was widely known), and the term 'ethnoastronomy' entered common usage.<sup>17</sup> It was then recognised that multi-disciplinary approaches were required. As John Carlson wrote in 1978,

Archaeoastronomy is a centrifugal science, yet the focus is on a central problem in the development of civilisation and technological man. It yields results at the interfaces between many traditional disciplines and makes contributions in unexpected and personally rewarding ways. These new results enrich not only the individual disciplines but also contribute to the general understanding of the origins of science and the roots of human culture.<sup>18</sup>

By 1977 there was sufficient interest for John Carlson to found the periodical *Archaeoastronomy Bulletin* (later renamed simply *Archaeoastronomy*)<sup>19</sup> as the house journal of the Center of Archaeoastronomy and, in the following year, the *Journal for the History of Astronomy*

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launched an annual supplement, also called *Archaeoastronomy*.<sup>20</sup> In September 1983, the Center of Archaeoastronomy organised, jointly with the National Air and Space Museum, the first international conference on ethnoastronomy at the Smithsonian Institute in Washington DC.<sup>21</sup> A strong emphasis on studies based on the Americas indicated both an expanding area of interest in academia, unencumbered by the baggage that was brought to studies of Megalithic culture by western archaeologists. The overwhelming focus on the non-western and pre-modern defined the area in anthropological rather than sociological terms, that is, about 'them' rather than 'us'.

Separately, the first Conference on Archaeoastronomy was organised in Oxford in 1981. This conference was to be the ancestor of an ongoing series of 'Oxford' conferences, named after the founding venue. The second conference was held in Mexico in 1986, the third in St. Andrews in 1990.<sup>22</sup> At the time of writing the seventh in the series is scheduled to be held in Flagstaff, Arizona in June 2004. The term 'Cultural Astronomy' first appeared in the volume of papers derived from the third conference,<sup>23</sup> but failed to replace the preferred 'astronomy in culture'. The term ('cultural astronomy' was not generally used until, separately, it became part of the sub-title for *Culture and Cosmos* in 1997.<sup>24</sup>) In recent years two academic groups have been formed to bring students of these areas together – SEAC<sup>25</sup> (the European Society for the Study of Astronomy in Culture) and ISAAC<sup>26</sup> (the International Society for the Study of Archaeoastronomy and Astronomy in Culture). In 2000 *Archaeoastronomy* became ISAAC's official journal, with the new subtitle, *the Journal of Astronomy in Culture*. In the same year the discipline gained academic recognition with the appointment of Clive Ruggles as the world's first Professor of Archaeoastronomy at Leicester University.

During its progress through the 1970s to 1990s the new academic discipline of archaeoastronomy tended to withdraw from the extreme position taken by Hawkins and Thom in relation to Megalithic culture and argue for the existence only of more limited alignments incorporating such obvious points as the solar solstices and lunar standstills, or orientations which were frequently approximate – for example, to the east in general – rather than to a particular point on the horizon.<sup>27</sup> These more limited claims should, in theory, have been more acceptable to archaeologists, although the profession as a whole remains indifferent to, or ignorant of, the evidence for Neolithic astronomy. Again, the politics of knowledge are evident. Neolithic culture, to use Barbara Bender's

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phrase, has become part of a 'contested landscape'.<sup>28</sup> The notion of a sophisticated Megalithic civilisation, though not necessarily Hawkins' and Thom's work in particular, has been appropriated by the advocates of the highly popular publishing genre which has come to be known as 'alternative archaeology', pioneered in the 1990s by such figures as Adrian Bauval and Graham Hancock.<sup>29</sup> Alternative archaeology pits itself against its academic cousin by insisting that the latter routinely suppresses evidence for a universal ancient civilisation. The counter-argument is that alternative archaeologists play fast and loose with the evidence, sacrificing rigour in pursuit of mythology. Although alternative archaeology as a discipline has roots in late eighteenth and nineteenth-century concepts of an ancient universal civilisation, particularly those propagated by H.P. Blavatsky and the Theosophical Society,<sup>30</sup> it may be said to represent a third distinct consequence of Hawkins' and Thom's work, along with academic archaeoastronomy on the one hand, and the romantic ancient astronomy of alternative spirituality on the other.

### **The History of Astrology**

The significance of astrology to the history of ideas, religion and science is no longer in question, the case having been made by Otto Neugebauer in 1951.<sup>31</sup> Before Neugebauer wrote, of course, Lynn Thorndike's epic *History of Magic and Experimental Science* had made the argument convincingly and in great detail.<sup>32</sup> A select group of other scholars have examined astrology's role in specific periods and cultures, notably in the ancient Middle East, the classical world and in medieval and Renaissance Europe. There were, though, two significant developments in 1984. A conference on the history of astrology was organised at London University's Warburg Institute<sup>33</sup> and the Astrological Lodge of London held the first of its annual seminars on the history of astrology seminars.<sup>34</sup> The idea of a journal on the history of astrology was first mooted after the Warburg conference but not actually implemented until 1997, with the launch of *Culture and Cosmos*. It was in recognition of the fact that astrology exists only within a cultural context, and that many of its areas of interest, such as its relationship with religion, are shared with the history of astronomy, that the new journal was given the subtitle, *a*

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*journal of the history of astrology and cultural astronomy*, as an explicit recognition of the fact that astrology exists in a cultural framework.

Astrology may be defined as the use of celestial phenomena to interpret and predict events on earth or, as Patrick Curry writes in this volume, ‘the practice of relating the heavenly bodies to lives and events on earth, and the tradition that has thus been generated’.<sup>35</sup>

However, in order to flourish, astrology requires a philosophical context based on a general belief that movements and changes in the heavens are significant for humanity. Astrology may be studied for itself and the art and technique of horoscope interpretation may be learnt, but it may also be examined as a phenomenon. This is what is done when its history is investigated: its social and political aspects, or its relation with religion, art and literature. The study of history, including that of astrology, is profoundly important for an understanding of the culture within which it flourishes. For example, questions may be asked about astrology, in relation to both the past and the present, which can inform us about its contemporary nature. If it is asked why people believe in astrology, an astrologer might answer ‘because it’s true’, a sceptic because people are prone to self-delusion. But, if it is then asked why most students of astrology, perhaps eighty-percent, are women, different questions may follow. Are women better at perceiving the truth than men? Or are they, as astrology’s sceptical critics would have it, more gullible?<sup>36</sup> Whatever the answer, it is clear that astrology exists within a cultural context, in this case gender, and to ignore that is to preclude any consideration of its nature and function.

This, it must be said, is an argument which finds influential support from amongst prominent astrologers. In the 1970 foreword to his 1936 work, *The Astrology of Personality*, Dane Rudhyar, the founder of humanistic and psychological astrology, announced that he was creating a new astrology specifically to cope with the consequences of the social and psychological upheavals of the 1960s in the face of which, he believed, previous forms of astrology were proving inadequate.<sup>37</sup> Alexander Ruperti, Rudhyar’s interpreter and fellow member of Alice Bailey’s Arcane School, stated in a lecture in the Czech Republic in the early 1990s that the notion that ‘an astrology with a capital A which exists somewhere, has always existed, and which we should all submit ourselves or be faithful to...is merely the result of our imagination’.<sup>38</sup> There is, therefore, according to Ruperti, no such thing as an astrology which has any independent, objective existence; there are only astrologers interpreting their relationship with the universe through the

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manipulation of astrological symbols. Each astrologer has his or her own astrological system, dependent on time, place and cultural context.<sup>39</sup> No astrological interpretation is undertaken irrespective of the astrologer's own location within a tradition of learning.

Astrology might therefore be reasonably classified as a species of 'cultural astronomy'. This is not a definition of what astrology may be in itself. It does not concern its essential nature, whether as an art, craft, science, pseudo-science or form of divination. It is an attempt to categorise it within an emerging system of disciplines and sub-disciplines. It says nothing about whether astrology is true or false, science or divination, objectively 'out there' or subjectively 'in here'. Yet such a classification may help bi-pass some of the problems which arise from competing views of what actually constitutes astrology. For example, the Moon's influence on the tides was an astrological phenomenon according to Claudius Ptolemy in the second century,<sup>40</sup> but is hardly considered so today. By contrast, planetary influences were excused from attacks on astrology in the middle ages,<sup>41</sup> being considered part of the natural framework of the cosmos, but today are seen as thoroughly astrological. If it is accepted that the boundaries of what might be considered to come under the heading of 'astrology' are negotiable and vary between different times, cultures, adherents and critics, then the distinctions between astrology, astral-religion, sacred calendars and all other applications of the sky to culture begin to blur. All become different aspects of cultural astronomy.

To quote Clive Ruggles,

What do people see when they look at the night sky? The answer is as much a cultural as an astronomical one. Thus, the study of cultural astronomies is concerned with the diversities of ways in which cultures, both ancient and modern, perceive celestial objects and integrate them into their view of the world. This fact, by definition, illustrates that a society's view of and beliefs about the celestial sphere are inextricably linked to the realm of politics, economics, religion, and ideology. In this sense, cultural

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astronomy is but part of the wider endeavor of investigating and interpreting human culture.<sup>42</sup>

### **The Work and Origins of the Sophia Centre**

The Sophia Centre was conceived in a conversation between myself and Dr Marion Bowman, then head of the Study of Religions department at Bath Spa University College, on 7th December 1999. (The name Sophia, from the Greek for wisdom, is taken from the Sophia Project, which funded the Centre's creation, and was originally chosen by Charles Harvey.) After some discussion the title chosen for both the Centre as an academic entity and for the MA which it teaches was 'Cultural Astronomy and Astrology', from the subtitle of *Culture and Cosmos*. (The Sophia Centre is the physical building within which the academic centre is housed). The Centre's foundation is the first academic recognition of this new discipline.

The Centre opened its doors for teaching at 6 pm on Monday 7th October 2002. Its work is essentially interdisciplinary, within the parameters set by its location in the School of Historical and Cultural Studies. It is historical, sociological and anthropological, and crosses the boundaries between the departments of History, Cultural Studies and Media Studies. However, its identification with the Study of Religions department is present in its phenomenological emphasis. The essence of phenomenology is that 'differing belief systems are examined as perceived in their own terms, rather than by adopting a reductionist stance'.<sup>43</sup> As defined by Edmund Husserl in 1913, the phenomenological approach requires that all inquiries into any area of human endeavour touching on consciousness pay due respect to the 'I', the individual's subjective experience, rather than attempt to explain it away or reduce it to quantitative measurement.<sup>44</sup> Husserl's phenomenological approach was adapted to the new discipline of the study of religions by Ninian Smart. It was Smart who largely defined the discipline's approach as one of 'methodological neutralism' or 'agnosticism',<sup>45</sup> as opposed to the religious commitment which was once assumed to be a prerequisite of the study of theology.<sup>46</sup> In other words, the phenomenon under investigation should, as far as possible, be understood on its own terms. This is an ambitious project, for the phenomenologist has first to 'bracket' off his or her own bias, in line with the requirements of true, classical scepticism, and for this to happen such bias has first to be identified and acknowledged. The goal is to understand the many varieties of human experience rather than explain them away or search for the causes which

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render them meaning-less as forms of psychological or social deviation. The meaning which human beings attach to stories, symbols and, within the context of the Sophia Centre, the sky, have to be respected in order to be understood.

There are parallel currents which support this project. For example, archaeoastronomy has accepted the need to examine not just supposed astronomical alignments in isolation, but the phenomenology of landscape. For example, rather than analysing Stonehenge from a survey, we should actually walk about the landscape as our Neolithic ancestors would have done.<sup>47</sup> What would such a person have actually experienced on walking up the avenue to the great stone circle?

Clive Ruggles is a pioneer of this phenomenological approach. Revising Thom's thesis of precise astronomical alignments, he argued for an alternative approach, considering that

What has been bequeathed to us is a set of more esoteric – and perhaps ultimately far more interesting - associations between the ceremonial architecture of life and death and the sun and moon, associations that manifest aspects of otherwise largely unfathomable systems of prehistoric thought.<sup>48</sup>

He added that,

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

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as that between quartz and moon-light – possess the power to express perceived reality in such a framework.<sup>49</sup>

The system of correspondences which Ruggles identifies as central to the megalithic world view is also the fundamental astrological world view – that all things are linked by what would once have been seen as essential, inner connections, but which would now more often be considered symbolic. This conclusion may have significance for other areas of the history of astronomy, assuming that we can take modern astrology and make certain generalisations about ancient astrology, and about megalithic culture. Clive Ruggles argues that we can. He asked,

why should the archaeologist, and in particular the student of Neolithic and Bronze Age Wessex, be interested in the perception of astronomical phenomena? A general answer is that in many, if not virtually all, non-Western world-views celestial phenomena are not separated from terrestrial ones, but form part of an integrated whole with complex interconnections. The association may often be viewed as closer in nature to modern astrology than modern astronomy.<sup>50</sup>

Further questions are suggested: if modern astrology may inform us about the experience of the megalithic astronomer, what is the experience of the modern astrologer? Is there an astrological experience? Such a question is central to the Sophia Centre's phenomenological emphasis.

The discussions held at the Oxford conferences were extended into a new series of conferences, those on the Inspiration of Astronomical Phenomena<sup>51</sup> (INSAP). There have, to date, been four conferences: 1994 in Castel Gandolfo, Italy, 1999 in Malta, 2000 in Palermo and 2003 in Oxford, with the fifth scheduled for the Adler Planetarium, Chicago, in 2005. The conferences are designed to include artists, art historians, astronomers, historians, physicists, indeed, people from any and every discipline, gathering to compare notes and share ideas. The non-western, pre-modern emphasis characteristic of ethnoastronomy and cultural astronomy in the 1980s was broadened and the topics covered at an INSAP conference might be ancient and distant, or immediate and contemporary. One presentation may be delivered by an artist incorporating cosmological themes in ceramics, the next by a physicist concerned with celestial images on ancient Greek coins. It was my privilege to attend the conferences in Malta in 1999 and Palermo in

2000,<sup>52</sup> to co-organise the 2003<sup>53</sup> conference with Valerie Shrimplin. In many ways the range of topics covered at the INSAP conferences, the respect for practitioners as well as critics and academics, and the blurring of the far too rigid distinctions between art and science have provided an inspiration for much of the syllabus at the Sophia Centre. That syllabus is interdisciplinary; it is anthropological, historical, literary, psychological, phenomenological, and both historical and contemporary.

In the broadest sense, then, the Sophia Centre's remit is to understand the many ways in which human beings use the sky as a historical backdrop to inspire the stories they tell about our place in the cosmos.

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