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WORLD HERITAGE AND ASTRONOMY

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other Astronomical Sites of the
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(Joint with Commission B7)**

Div. C / Commission C4 WG2

**Classical Observatories from the
Renaissance to the 20th Century**

Div. C / Commission C4 WG3

Heritage of Space Exploration

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Astronomical Heritage in Danger

Div. C / Commission C4 WG5

**Intangible Heritage
(Joint with Commission C1)**

Div. C / Commission C4 WGAAC

**Archaeoastronomy and Astronomy in
Culture (Joint with Commission C3)**

TRIENNIAL REPORT 2015-2018

1. Background

UNESCO's Astronomy and World Heritage Initiative (AWHI) (whc.unesco.org/en/astrometry) has existed since 2004 to identify, promote and protect heritage, and potential World Heritage, connected with astronomy. A Memorandum of Understanding (MoU) between UNESCO and the IAU, under which the IAU undertook to implement the AWHI jointly with UNESCO, was signed in 2008 ahead of the IYA 2009. This commitment now continues indefinitely, UNESCO and the IAU having entered into a wider global partnership.

The Astronomy and World Heritage Working Group (AWHWG) of Commission 41 (now C3) on the History of Astronomy was formed in 2008 to fulfil the IAU's commitments under the MoU. In order to do this, it worked from the outset with ICOMOS, UNESCO's advisory body on cultural (as opposed to natural) sites, to help establish both a common global vision on astronomical heritage and robust general principles for assessing the value of different types and categories of scientific and technological heritage relating to astronomy, whether or not they represent potential world heritage under the terms of the

World Heritage Convention. The AHWG also helped to set up a web-based heritage portal (the “Portal to the Heritage of Astronomy”, www.astronomicalheritage.net) which not only provides public dissemination but also holds a range of information, case studies and tools vital for State Parties (national governments) developing nomination dossiers. A World Heritage Committee directive issued in 2012 recognised the IAU’s capacity to work directly with State Parties who are preparing nomination dossiers, as part of UNESCO’s “upstream processes”.

By 2015 the IAU had developed a much broader range of commitments relating to astronomical heritage. This resulted in the creation of Commission C4, which replaced the earlier AHWG.

2. Developments within the past triennium

2.1. *Second Thematic Study*

The second ICOMOS–IAU Thematic Study on astronomical heritage (“TS2”) was published in 2017 (Ruggles 2017). It will formally be reported to and validated by UNESCO at the 2018 World Heritage Committee meeting in Bahrain. ICOMOS Thematic Studies (some of which are produced in co-operation with specialist partner organisations) aim to provide a synthesis of current research and knowledge on a specific heritage theme. They are useful to State Parties wishing to nominate a heritage property for inscription on the World Heritage List, and help to encourage them to do so. TS2 examines a number of key questions relating to astronomical heritage sites and their potential recognition as World Heritage, attempting to identify what might constitute “outstanding universal value” (OUV) in relation to astronomy. It represents the culmination of several years’ work to address some of the most challenging issues raised in the first ICOMOS–IAU Thematic Study (“TS1”), published in 2010 (Ruggles & Cotte 2010).

The case studies included in TS2, several written by members of the Commission, include seven-stone antas (prehistoric dolmens) in Portugal and Spain, the thirteen towers of Chankillo in Peru, the astronomical timing of irrigation in Oman, the Royal Observatory, Cape of Good Hope in South Africa, Pic du Midi de Bigorre Observatory in France, the AURA Observatory in Chile, the Canarian Observatories in Spain, Mauna Kea Observatory in Hawai’i, Baikonur Cosmodrome in Kazakhstan, the Eastern Alpine and Großmugl starlight areas in Austria, and Aoraki-Mackenzie International Dark Sky Reserve in New Zealand. A case study on Stonehenge, already a World Heritage Site, focuses on preserving the integrity of the solstitial sightlines.

A particularly complex issue is the recognition and protection of dark skies. Dark sky areas cannot in themselves be considered as potential World Heritage Sites, but TS2 includes a thematic chapter by Michel Cotte of ICOMOS considering a range of ways in which dark sky values can be interrelated with broader cultural or natural values of a place and thereby contribute to its overall cultural or natural value and potential OUV. Other issues explored in TS2 include the need to balance archaeoastronomical considerations in the context of broader archaeological and cultural values; the potential for serial nominations, for example among groups of monuments whose astronomical significance is only evident from the group as a whole; and management issues such as preserving the integrity of astronomical sightlines through the landscape.

2.2. *Portal to the Heritage of Astronomy*

Commission members have continued to help maintain the Portal to the Heritage of Astronomy, supplying several new case studies. The existing “Full case studies” and

“Short case studies”, both applicable to tangible fixed heritage, have been complemented by new “Movable object” case studies suitable for movable instruments and artefacts, and “Intangible heritage” case studies which are currently being commissioned. The portal has also been configured to include IAU-recognised “Outstanding astronomical heritage” sites (see below) and there is a new publicly available tool to add “Places connected to the sky” on a more informal basis.

An extensive technical upgrade to the Portal was undertaken in November 2017. The “heritage finder”—the main tool for locating relevant heritage case studies on the portal, either via a map or a list—has been completely redesigned so as to provide a range of selection tools including a logarithmic time slider. A “word cloud” tool has also been added. There has also been a complete overhaul of the information pages, in line with the publication of TS2.

2.3. *Current World Heritage nominations*

All of the activities listed above form part of the IAU’s contribution to the AWHI, which in the longer term, directly or indirectly, influence and encourage State Parties to put forward World Heritage nominations relating to astronomical heritage. This long-term process is now beginning to bear significant fruit. At the time of writing, three countries are known to be nominating astronomically related properties for inscription on the World Heritage List in 2019:

- Peru: Chankillo astronomical complex (whc.unesco.org/en/tentativelists/5792/);
- Spain: Risco Caído and the sacred mountains of Gran Canaria Cultural Landscape (whc.unesco.org/en/tentativelists/6081/);
- United Kingdom: Jodrell Bank Observatory (whc.unesco.org/en/tentativelists/5676/).

2.4. *“Outstanding Astronomical Heritage” sites*

The Commission has undertaken to develop a global list of astronomical heritage sites considered by the IAU to be of the utmost importance, whether or not they are recognised by UNESCO as World Heritage Sites. We are developing a preliminary inventory that, subject to approval at the Vienna GA, will become the initial list of IAU “Outstanding Astronomical Heritage” (OAH) sites. It is anticipated that the Commission meeting in Vienna will finalise the process for handling the nomination and consideration of proposed additions to the OAH list.

2.5. *Meeting on the Heritage of Cultural Astronomy*

A five-day meeting on “Hawaiian, Oceanic and Global Cultural Astronomy: Tangible and Intangible Heritage” was held in Hilo, Hawai‘i, at the start of the triennium in 2015. The meeting considered ways in which a heritage approach could help to raise awareness of and respect for, and thus help to preserve, both tangible places and intangible cultural traditions. In particular, Michel Cotte drew attention to the possibilities offered by UNESCO’s Convention for the Safeguarding of Intangible Cultural Heritage for serial international nominations that could relate to key themes such as ocean navigation. The meeting was important in bringing indigenous peoples, academics and heritage professionals and giving a voice to those who do not normally feel confident to communicate their knowledge or work outside their immediate cultural peers, still less to present it to a global audience. The work to recognise and protect indigenous cultural heritage relating to astronomy is being carried forward by WG5.

3. Conclusion and future plans

During its first decade of involvement with the AWHI, the IAU—through Commission C4 and its predecessor, the AWHWG—has helped develop the infrastructure to enable State Parties to nominate astronomical World Heritage properties, and UNESCO’s Advisory Bodies to judge them, with confidence. As a result, the AWHI has now reached maturity, as is evident from the fact that at least three astronomically related World Heritage nominations are going forward in 2018 for inscription in 2019. A Steering Group of National Focal Points appointed by national governments is in place and will retain strategic oversight of the AWHI on behalf of interested State Parties.

In the coming triennium, a key activity will be to progress the IAU’s own list of Outstanding Astronomical Heritage sites, which will serve along sites that are recognised on the World Heritage List as a “gold standard” level of international recognition.

The Commission and its members will also continue to work directly with State Parties to help progress particular nomination projects. One of the most important of these, to which WG1 is devoted, is the complex transnational “Windows to the Universe” project seeking heritage recognition for a number of modern observatories and to enhance their protection as sites of active astronomical research against mining, light pollution, and radio spectrum interference. As TS2 has shown, dark skies issues can also be addressed from the viewpoint of natural heritage and Commission C4 plans to work more closely with the IUCN—UNESCO’s advisory body for natural sites—and in particular its Dark Skies Advisory Group (DSAG), to help promote a much stronger awareness of dark skies issues within UNESCO.

Clive Ruggles
President of the Commission

References

- Ruggles, C. & Cotte, M. (eds.) 2010, *Heritage Sites of Astronomy and Archaeoastronomy in the context of the UNESCO World Heritage Convention: A Thematic Study* (Paris: ICOMOS)
- Ruggles, C. (ed.) 2017, *Heritage Sites of Astronomy and Archaeoastronomy in the Context of the UNESCO World Heritage Convention: Thematic Study no. 2* (Paris: ICOMOS)