

# MENSURA CAELI

Territorio, città,  
architetture, strumenti

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UNESCO THEMATIC INITIATIVE  
*ASTRONOMY AND WORLD HERITAGE*

1. *Introduction*

*The Convention concerning the protection of cultural and natural World Heritage of 1972* provides a unique opportunity to preserve exceptional properties world-wide and to raise awareness about scientific concepts linked to these properties.

The mission of UNESCO regarding World Heritage consists of assisting the States Parties to this *Convention* to safeguard sites inscribed on the World Heritage List, to support activities led by States Parties in the preservation of World Heritage, and to encourage international cooperation in heritage conservation.

The World Heritage Committee adopted in 1994 the Global Strategy whose objective is to establish a representative and balanced World Heritage List, to fully reflect the cultural and natural diversity of heritage of outstanding universal value.

Considering that properties related to science are among the most under-represented on the World Heritage List and recognizing the absence of an integrated thematic approach for sites which have a symbolic or direct connection to astronomy, the UNESCO World Heritage Centre, in close consultation with States Parties and Advisory Bodies, has elaborated the Thematic Initiative *Astronomy and World Heritage*.

2. *Astronomy and World Heritage*

Created by an international multidisciplinary expert group<sup>1</sup> within the framework of the Global Strategy, as a pilot activity for the identification of the sites connected with astronomy, as well as recognized by an expert working group on scientific heritage<sup>2</sup>, the thematic initiative on *Astronomy and World Heritage*, aims to establish a link between Science and Culture towards recognition of the specific values of properties connected with astronomical observations dispersed throughout all the geographical regions of

<sup>1</sup> 2003 First presentation of the pilot project *Archaeoastronomical sites and observatories* (UNESCO World Heritage Centre); 2004 First International Expert Meeting on elaboration of the Implementation Strategy of the Thematic Initiative *Astronomy and World Heritage* (UNESCO Venice Office).

<sup>2</sup> 2008 Expert Workshop *World Heritage: Science and Technology* (London, UK).

the world, not only scientific but also as a testimony of traditional community knowledge.

### 3. *Why “Astronomy” and “World Heritage”*

The cosmos have captivated the imagination of civilizations throughout the ages. The efforts of those cultures to understand or interpret what they see in the sky are often reflected in their architecture, petroglyphs, and other cultural representations.

Properties relating to astronomy stand as a tribute to the complexity and diversity of ways in which people rationalized the cosmos and framed their actions in accordance with that understanding. This includes, but is by no means restricted to, the development of modern scientific astronomy. This close and perpetual interaction between astronomical knowledge and its role within human culture is a vital element of the outstanding universal value of these properties.

Understanding the role of these properties connected with astronomy, as well as promoting them through public awareness-raising campaigns, are crucial and vital steps in our common efforts to safeguard them for future generations.

### 4. *Implementation strategy*

The proposal of the thematic initiative on *Astronomy and World Heritage* was finalized during the first meeting of the representatives of the scientific community of twelve States Parties, ICOMOS and NASA (Venice, Italy, March 2004) and presented during the 29th session of the World Heritage Committee (Durban, South-Africa, July 2005).

The World Heritage Committee in July 2005 requested the Director of the World Heritage Centre to explore further this Thematic Initiative as a means to promote, in particular, nominations which recognize and celebrate achievements in science. The World Heritage Centre launched an appeal to States Parties to contribute to the implementation of this Initiative. Numerous National Focal Points in charge of its implementation were designated world-wide and participated to the elaboration of the first proposal of the integrated implementation strategy of the Initiative.

At its 32nd session (Quebec City, 2008) the World Heritage Committee examined this integrated implementation strategy, as well as information document on Thematic Studies, including the Heritage of Astronomy.

This implementation strategy of the Initiative could be applied through the following three broad phases:

– Phase I aims at (a) acquiring an in-depth knowledge of the outstanding properties connected with astronomy in all geographic regions

through their identification, study and inclusion of the most representative of these properties on the national tentative lists; (b) creating networks of cooperation between scientific communities, governmental bodies and site managers; (c) developing pilot-project on serial transnational nominations.

– Phase II aims at (a) promoting the most outstanding of these properties which recognize and celebrate achievements in science through their inscription on the World Heritage List; (b) promoting international cooperation in order to safeguard and promote these properties; (c) providing a platform for capacity building; (d) raising public-awareness.

– Phase III aims at (a) fine-tuning the results of the research and capacity building activities; (b) ensuring the sustainability of results; (c) monitoring the ongoing development of pilot projects.

The Executive Board of the International Astronomical Union (IAU) unanimously adopted the proposal to establish an official partnership with UNESCO within the framework of this World Heritage Initiative in order to facilitate the identification and nomination process of astronomical properties. The Memorandum of Understanding between UNESCO and IAU within the framework of this Initiative will be signed on 30 October 2008. The International Astronomical Union created in 1919, will provide through its bodies composed by 9.000 experts from 70 countries, the scientific expertise in the field of Astronomy required for the implementation of this Thematic Initiative worldwide.

The establishment of tripartite collaboration between UNESCO, ICOMOS and IAU in order to provide the necessary expertise to the State Parties for the identification and nomination of properties connected with astronomy on the World Heritage List is in process.

The Thematic study on the *Heritage of Astronomy* associated to the UNESCO thematic initiative *Astronomy and World Heritage* would be developed in the context of the recent interest in the review of the relationship between heritage of sciences, traditional community knowledge and the *World Heritage Convention*.

## 5. *The Database*

In order to facilitate the collaboration between different national and international experts, the World Heritage Centre created, thanks to financial support of the Royal Astronomical Society of the United Kingdom, the structure of the first visual and documentary Data Base of sites related to astronomy on the Web site of the World Heritage Centre<sup>3</sup>.

<sup>3</sup> [http://whc.unesco.org/pg.cfm?cid=281&id\\_group=21](http://whc.unesco.org/pg.cfm?cid=281&id_group=21).

This data base could be used as a tool for the inventory, research, management and pooling of information as well as provides a network to share knowledge for all international, national cultural and scientific institutions, as well as NGO's, involved in the development and implementation of the Initiative.

A public web page was also created in order to increase the visibility of the cultural World Heritage sites which have a link to astronomical observations<sup>4</sup>.

## 6. *Nomination of properties to the World Heritage List*

The World Heritage Centre wishes to assist the State Parties in the elaboration of the nomination document of properties linked to astronomy in view of its inscription on the World Heritage List.

«The nomination document is the primary basis on which the World Heritage Committee considers the inscription of the properties on the World Heritage List»<sup>5</sup>.

The average time required from submission of the complete nomination file of property to the decision of the World Heritage Committee concerning this property is about two years.

«States Parties are encouraged to prepare nominations with the participation of a wide variety of stakeholders, including site managers, local and regional governments, local communities, NGOs and other interested parties»<sup>6</sup>.

«The Committee considers a property as having outstanding universal value if the property meets one or more of the following criteria<sup>7</sup>. Nominated properties shall therefore:

1. represent a masterpiece of human creative genius;
2. exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;
3. bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;
4. be an outstanding example of a type of building, architectural or

<sup>4</sup> [http://whc.unesco.org/pg.cfm?cid=281&id\\_group=21&s=home](http://whc.unesco.org/pg.cfm?cid=281&id_group=21&s=home); <http://whc.unesco.org/en/activities/19/>.

<sup>5</sup> Paragraph 120 *Operational Guidelines for the Implementation of the World Heritage Convention*.

<sup>6</sup> Paragraph 123 *Operational Guidelines for the Implementation of the World Heritage Convention*.

<sup>7</sup> Paragraph 77 *Operational Guidelines for the Implementation of the World Heritage Convention*.

technological ensemble or landscape which illustrates (a) significant stage(s) in human history;

5. be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;

6. be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria);

7. contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;

8. be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;

9. be outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

10. contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation».

«To be deemed of outstanding universal value, a property must also meet the conditions of integrity and/or authenticity and must have an adequate protection and management system to ensure its safeguarding»<sup>8</sup>.

The first milestone for the identification of the properties within a framework of the thematic initiative *Astronomy and World Heritage* was the development of a methodological approach aimed at the consideration of properties associated to astronomy on the base of the aforementioned World Heritage criteria. These were set forth during the March 2004 conference. The properties that can be associated with astronomy have initially been defined by the expert group in the following manner:

1. Properties which by their concept and/or the environmental situation have significance in relation to celestial objects or events;

2. representations of the sky and/or celestial objects or events;

<sup>8</sup> Paragraph 78 *Operational Guidelines for the Implementation of the World Heritage Convention*.

3. observatories and instruments;
4. properties with an important link to the history of astronomy.

The first definition includes properties such as temples, pyramids, megalithic sites and other monuments, for example Stonehenge in England that are aligned to celestial events such as the midwinter sunrise or the annual first appearance of a bright star like Antares in the night sky. The second covers the humanistic expression of the sky, such as mural paintings, murals, rock art. The third definition focuses on observatory buildings with its instruments like telescopes, but also includes places and/or landscapes that have been used repeatedly to observe the night sky which may not be in buildings. The fourth definition focuses on properties important to the development of astronomy that would not be included in the previous definitions. This would include locations where celestial events such as the transit of Venus across the face of the Sun were observed as well as the important monuments such as the houses of the greatest astronomers.

## 7. Conclusion

The UNESCO thematic initiative *Astronomy and World Heritage* offers States Parties a possibility to evaluate and recognize the importance of this specific heritage, in terms of enrichment of the history of humanity, the promotion of cultural diversity and the development of international exchanges.

Amongst the cultural activities of UNESCO, the thematic initiative on *Astronomy and World Heritage* is to date the only cultural activity created in accordance with the Resolution of the 33rd session of the UNESCO General Conference, in support of the 2009 – International Year of Astronomy which provides an opportunity to raise public awareness, especially with young people about scientific heritage and to enhance the links between science, education, culture and communication.