



*Session: The Implementation of the  
Astronomy and World Heritage  
Initiative: Achievements, Issues and  
Prospects*

**What makes astronomical heritage  
valuable?  
Identifying potential 'Outstanding  
Universal Value' in cultural properties  
relating to astronomy**

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# 1. Introduction : New themes for the World Heritage List?

From the years 90s : **“The Global Strategy for a Representative, Balanced and Credible World Heritage List”**

To go beyond classical fields studied from beginnings of the WH Convention :

- ◆ Canals, corridors of transportation
- ◆ Cultural roads
- ◆ Industrial Heritage
- ◆ Heritage of technology and sciences
- ◆ etc.

*Cultural road of Camino Real (Mexico)*

*Industrial site of saltpeter works at Humberstone and Santa Laura (Chili)*

*Mountain Railway of India (Serial nomination, India)*





# 1. Introduction : New themes for the World Heritage List?

Two new trans-thematic methods for a larger implementation of the WH Convention :

- ◆ Cultural landscapes
- ◆ Possibility of serial nominations (national or trans-boundaries)



*Grand Canal (Chine)*



*Rice terraces (Philippines)*

*Qhapaq Ñan, Andean Road System (6 States)*

# 1. Introduction : New themes for the World Heritage List ?

Nevertheless, such enlargement must be done in a common format for all the past and new categories of the WH List, for both natural and cultural properties, as it was stated in the official *Guidelines*...

*Guidelines, revised 2013 (French version)*

WHC.13/01  
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## **Orientations devant guider la mise en œuvre de la Convention du patrimoine mondial**

ORGANISATION DES NATIONS UNIES  
POUR L'ÉDUCATION, LA SCIENCE ET LA CULTURE

COMITE INTERGOUVERNEMENTAL POUR LA  
PROTECTION DU PATRIMOINE MONDIAL,  
CULTUREL ET NATUREL



CENTRE DU PATRIMOINE MONDIAL



## 2. The IAU - ICOMOS joint Thematic Study: Origins

- ◆ At the end of the 2000s, the joint Initiative for Astronomy by UNESCO and by the International Union of Astronomers (IAU) underlined importance of the A-A Heritage;
- ◆ The Initiative also shows the need to deepen case studies for tangible evidences and related intangible values;
- ◆ Need for an interdisciplinary methodology of the heritage analysis both in scientific and heritage terms.



## 2. The IAU - ICOMOS joint Thematic Study: The WH way

- ◆ The initial question was: “What are the best ways to support and encourage the recognition of the most outstanding examples of astronomical heritage”;
- ◆ For the bests, answer could be the World Heritage List;
- ◆ Methodology and studies must be accorded to the WH Guidelines and recommendations;
- ◆ Natural partners become to be ICOMOS for cultural heritage and UICN for natural heritage.



*The Struve Arc, 19<sup>th</sup> C measurement of the dimension of the earth through 10 countries.*



## 2. The IAU - ICOMOS joint Thematic Study: Methodology



- ◆ Subject of the Astronomical and Archaeo-Astronomical Heritage appears as specific multidisciplinary field;
- ◆ A merging point between architecture, archaeology, sociology, technology and science;
- ◆ A complex heritage needing global overviews of subfields (periods, regions...);
- ◆ Need of well understand and well analyzed case studies;
- ◆ Need of inventories and comparisons;
- ◆ Assuming a shift from enthusiasm to professionalism.

*Ulugh Beg's Observatory, Samarkand, Uzbekistan. Kindely from © OUR PLACE*

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Heritage Sites of Astronomy  
and Archaeoastronomy in the  
context of the UNESCO World  
Heritage Convention

Clive Ruggles & Michel Cotte

A Thematic Study

June 2010



### 3. Contents of the Thematic Study

- ◆ The ICOMOS & UAI joint *Thematic Study on the Heritage of Astronomy and Archaeo-astronomy* (vol. one) was achieved in 2010;
- ◆ The list of themes aims to provide a short and clear overview of the recognized evidence relating to astronomical heritage in general;
- ◆ From prehistoric times to 20thC Heritage, and for every parts of the world along historical times.



### 3. Contents of the Thematic Study

- ◆ Works involved more than 40 authors coming from around 20 different countries from all the World regions;
- ◆ Result is 16 chapters following chronology and geography with consistent introduction and conclusion by editors pointing out epistemological and methodological questions;
- ◆ A tool for a first valuable approach;
- ◆ Free internet access to the ICOMOS-IAU Thematic Study.

*Einstein Tower,  
Potsdam, Germany*



## 4. The WH recognition for astronomical and archaeoastronomical Heritage: Results

- ◆ Few sites are recognized for their astronomical values alone, but some as Struve Arc (serial nomination, Europe) and Jantar Mantar (India);
- ◆ Some important places are listed with important associated value for astronomy or archaeoastronomy is recognized as : Samarkand (central Asia), Denfeng (China), different places in Egypt and pre-Columbian Mesoamerica, Stonehenge (UK), etc.

*General view of the Jantar Mantar, Jaipur, India*





## 4. The WH recognition for astronomical and archaeoastronomical Heritage: Perspectives

- ◆ To pursue and to deepen the T.S. with “Extended case Studies” by the web portal: close from a “Tentative List nomination”;
- ◆ Edition of TS, vol. 2, must be submitted to peer review of ICOMOS to be an official document of the WH Committee



*The Yuan  
Dynasty  
Observatory  
(China)*

## 4. The WH recognition for astronomical and archaeoastronomical Heritage: Perspectives

- ◆ Some rare but really important archaeoastronomical individual cases appears as very promising ones;
- ◆ Paradigmatic example is certainly Chankillo – Peru; but there is others.

*Chankillo  
(Peru), The  
Thirteen  
Towers as  
seen from  
the Fortress.*





## 4. The WH recognition for astronomical and archaeoastronomical Heritage: Perspectives

- ◆ Frequently, astronomical value of already WH listed places are not really recognized; we have to encourage State Parties to refurbish it correctly in the process of OUV revision



*Pulkovo Observatory,  
San Petersburg, Russia*

## 4. The WH recognition for astronomical and archaeoastronomical Heritage: Perspectives

- ◆ For astronomical Heritage, many examples are indeed members of important subcategories of astronomical heritage with similar sites; that encourage serial approaches and strict selection;
- ◆ One of the most promising possible series is the “High Mountain Observatories”; merging with various qualities: precise definition of the series, large World repartition, merging with dark sky reserve initiative, outstanding contribution to the scientific understanding of the Universe, etc.



*Roque de los Muchachos 20<sup>th</sup> C  
Observatory, Canary Islands (Spain)*



## 5. Conclusion: Astronomical and Archaeoastronomical heritage in context

- ◆ Astronomy can take many forms but it is never alone: it is always a part of a larger ensemble of attributes that characterize a human society at a given time;
- ◆ Astronomy was permanently not only 'pure' knowledge but an important part of human symbolic representations (Cosmology);
- ◆ Consequently A & A heritage study is multi-disciplinary field and effort done in this way by the TSs is promising.



*Jaipur Observatory, 18th C India*



*Aflaj system of irrigation (Oman)  
using astronomical survey to  
determine duration of water  
supply: a mixed heritage of  
science, technology, practical  
know-how and social ruling...*

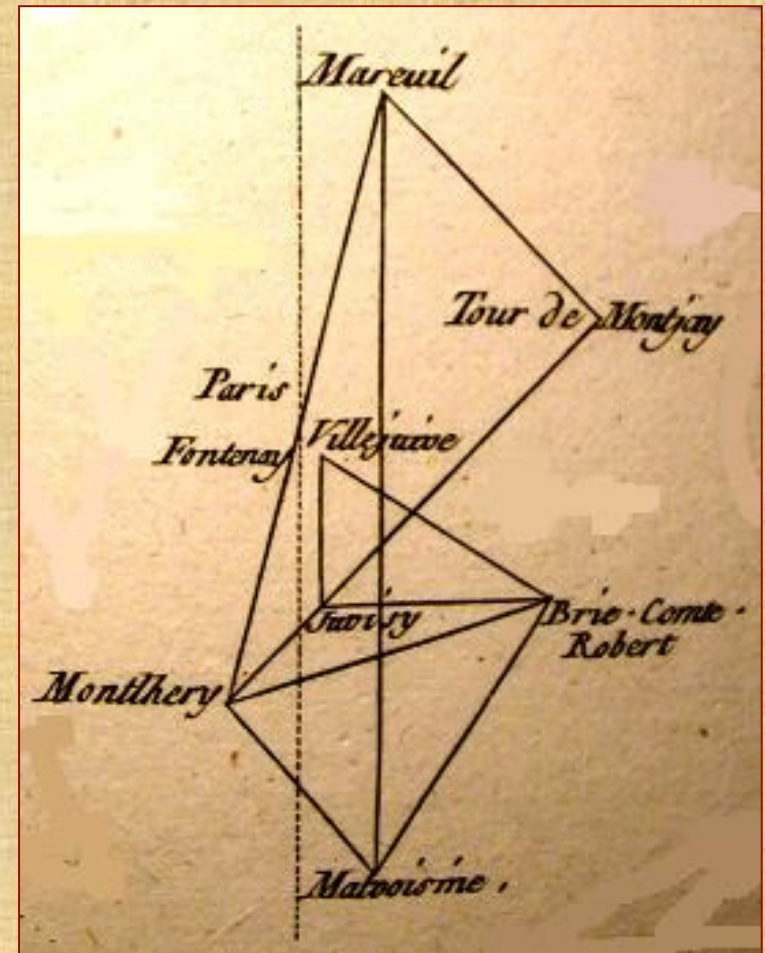
## 5. Conclusion: Tangible and Intangible heritage

- ◆ Although the World Heritage Convention focuses on 'tangible immovable heritage', we have to present immovable as well as moveable, and intangible as well as tangible; only the global approach make sense and give the value of the place
- ◆ The core of scientific knowledge is mainly intangible. It is an intellectual framework of the human spirit using specialized languages (written language, mathematics, etc.) and images (drawings, maps, photographs, physical information such as spectra, and so on).



## 5. Conclusion: Immoveable and Moveable heritage

- ◆ The distinction between property and moveable objects is important from the juridical and heritage perspective, but has no real significance for astronomers.
- ◆ The importance of the archives, collections and bibliographies. These documents are the product of scientific activities in their cultural context.
- ◆ The only reasonable conclusion is that the dichotomy between 'fixed' and 'moveable' makes little sense as a classificatory criterion in astronomical heritage in particular, or in science or technology heritage in general.



*The triangulation method use by Jean Picard for measuring one arc degree of the 'méri dien de Paris' during the 1670s.*



## 5. Conclusion : Cultural and natural heritage relating to astronomy

- ◆ The importance of natural and cultural landscapes (e.g. the High mountain observatories);
- ◆ A possible way of recognition for the 'Dark Sky' quality of a place among other attributes;
- ◆ Astronomy represents a rich and significant aspect of cultural and natural heritage. Recognizing this permits us to identify and to clarify astronomical value in the context of the World Heritage Convention.







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Thanks for your attention

The Thematic Study is available on the websites of the WH Center, IAU and ICOMOS