

COMMISSION 41

HISTORY OF ASTRONOMY

HISTOIRE DE L'ASTRONOMIE

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Astronomy and World Heritage

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Inter-Division X-XII WG

Historic Radio Astronomy

TRIENNIAL REPORT 2006 - 2009

1. Introduction

Commission 41 of the International Astronomical Union deals with all aspects of astronomical history and heritage from ancient sky knowledge to developments in modern astronomy that have occurred within living memory. It encourages and supports research in the history of astronomy and related fields such as archaeoastronomy and is also concerned with the identification, documentation and preservation of vital aspects of our astronomical heritage such as sites, artifacts, instruments and archives. Commission 41 is one of the largest Commissions in the Union, and is a member of Division XII on *Union-Wide Activities*.

All Commission 41 members are also, ipso facto, members of the Inter-Union Commission for the History of Astronomy (ICHA). This is a joint Commission of the IAU and the International Union for the History and Philosophy of Science (IUHPS). Membership is open to IAU members as well as to scholars who, being primarily historians rather than astronomers, are not members of the IAU.

Commission 41's activities during this period have been primarily geared toward the 400th anniversary of Galileo's use of telescope. Luckily, the year 2009 happens to be the year of the IAU General Assembly. The UN has also declared 2009 to be the *International Year of Astronomy* and has asked the IAU to serve as the facilitating body. Being a dedicated Commission on history of astronomy Commission 41 has been fully alive to its responsibilities.

2. Co-sponsored meetings in 2009

Commission 41 is co-sponsoring three scientific meetings for 2009, two of them being Special Sessions at the IAU XXVII General Assembly in Rio de Janeiro, 2006. The main aim is to integrate history of astronomy with issues of contemporary significance.

(i) SpS4 on *Astronomy education between Past and Future*
SOC co-chairs: Rajesh K. Kochhar, Jean-Pierre de Greve and Edward F. Guinan

(ii) Sp5 on *Accelerating the rate of astronomical discovery*
SOC co-chairs: Raymond P. Norris and Clive L.N. Ruggles

(iii) Commission 41 is co-sponsoring a joint symposium on *Astronomy and its instrumentation before and after Galileo*, being organized by INAF Astronomical Observatory of Padova, in Venice 28 September - 3 October 2009. Co-chairs: Luisa Pigatto and Clive L.N. Ruggles)

3. UNESCO Astronomy and World Heritage Initiative

In 2005, UNESCO approved the *Astronomy and World Heritage Initiative* (AWHI) for the recognition, promotion, protection and preservation of places of exceptional cultural value and significance relating to astronomy. Here astronomy is broadly interpreted to include world-wide perceptions of the sky through the ages. The first task is to identify the most exceptional astronomical site and properties that can be included in the world list. Formal criteria for inclusion in the final list should emerge from this exercise. On behalf of the IAU, Commission 41 is coordinating its efforts on the AWHI with UNESCO. As an important first step, a tentative preliminary list of such sites was prepared through received suggestions and submitted. The next step, now in progress, is to set up a representative Working Group for which inputs from individuals have already been received.

At the occasion of the official signing of a Memorandum of Understanding between UNESCO and the IAU on 30 October 2008 in Paris, the following press releases have been issued.

3.1. *UNESCO Flah Info No. 151-2008. UNESCO and International Astronomical Union sign a Memorandum of Understanding*

Office of the Spokesperson
La Porte-parole

On 30 October 2008 the Director-General of UNESCO, Mr Koïchiro Matsuura, and the General Secretary of the International Astronomical Union (IAU), Professor Karel A. van der Hucht, signed a Memorandum of Understanding (MoU) formalizing their intention to expand their collaboration in the development of UNESCO's Astronomy and World Heritage thematic initiative.

Also present at the ceremony were Professor Clive Ruggles, Vice-President of the IAU Commission on the History of Astronomy, Professor David Valls-Gabaud, Deputy Director of the Observatoire de Paris and Mr Cipriano Marin, Coordinator of the Starlight Initiative, Spanish National Commission for UNESCO.

Under the MoU, the two organizations will undertake joint activities focusing on establishing the link between science and culture by identifying properties related to astronomy located around the world, preserving their memory and saving them from progressive deterioration.

In his remarks, the Director-General noted that very few of the 878 World Heritage properties currently inscribed on the List had been nominated for their astronomical values. Referring to the World Heritage Committees Global Strategy for a Balanced Representative and Credible World Heritage List, Mr Matsuura underscored the importance of diversifying the types of sites on the List, as well as the number of countries whose heritage featured in it. The work plan foreseen under this MoU would make an important contribution to these efforts.

Continuing, the Director-General expressed his gratitude for the IAUS involvement in the development of the Astronomy and World Heritage initiative since 2003 and expressed his pleasure that this would be expanded through this important framework for co-operation in the fields of research, education and awareness about our astronomical heritage, noting that its formalization on the eve of 2009, International Year of Astronomy was most fitting. Speaking of his pride that UNESCO had been designated lead agency of the International Year by the 62nd UN General Assembly, Mr Matsuura noted that many important events were being co-organized with the IAU, the Years facilitator. He looked forward to welcoming Professor van der Hucht and his delegation to UNESCO on 15-16 January 2009 for the inauguration of the International Year.

UNESCO

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Website: www.unesco.org/dg

– End of Flash Info –

3.2. *IAU Press Release – IAU0808: UNESCO and the IAU sign key Agreement on Astronomy and World Heritage Initiative*

Oct 30, 2008, Paris

A Memorandum of Understanding is to be signed today, 30 October 2008, between UNESCO and the International Astronomical Union (IAU). The IAU will be integrally involved in the process of developing UNESCOs Astronomy and World Heritage Initiative, helping to promote astronomical sites of ‘Outstanding Universal Value’.

The world-famous UNESCO World Heritage Convention is renowned for its work protecting and promoting sites that celebrate the heritage of humanity. Examples include the Pyramids of Giza in Egypt, the Mayan city of Chichen Itza in Mexico, and the Stonehenge in the United Kingdom.

However, astronomical heritage is currently under-represented. All too often, neglect and mistreatment cause irreversible harm. The new Memorandum will place the Astronomy and World Heritage Initiative in a better position to reverse this trend by raising awareness of the cultural importance of astronomical sites, both ancient and modern.

Adopting the successful strategy previously applied to architectural and natural sites, the new UNESCO Astronomy and World Heritage initiative will officially recognise, promote and preserve astronomical sites that are of outstanding significance to humankind. The places in question include landmarks whose design or location relate to celestial events, whether with symbolic or direct connection with astronomy. Historic sites, instruments and representations help to broaden and enhance our perception of the sky. This theme is integral to the upcoming International Year of Astronomy 2009. The initiative is therefore designated as one of the Year’s key Cornerstone projects, which are being

organised to increase public understanding and appreciation of astronomy throughout the coming year and around the world.

In order to fulfil its commitment to the UNESCO Initiative, the IAU has set up a new Working Group on *Astronomy and World Heritage* under the chairmanship of Professor Clive Ruggles, Emeritus Professor of Archaeoastronomy at the University of Leicester, UK. Ruggles, who is also Vice-President of the IAU's Commission 41 on the *History of Astronomy*, has already worked with UNESCO in the early stages of developing the initiative. He said: "The globalisation of human culture is proceeding at a relentless pace, and it is becoming increasingly urgent to preserve some of the more fragile aspects of our common cultural heritage. 'Fine', you might say, 'but why worry about astronomy in this regard?' The main reason, I think, is that every human culture has a sky, and strives to interpret what people perceive there. The understanding they develop inevitably comes to form a vital part of their fundamental knowledge concerning the cosmos and their place within it. Astronomy is not just a modern science but a fundamental reflection of how all people, past and present, understand themselves in relation to the Universe".

At present, States Parties to the World Heritage Convention may nominate sites for inscription on the World Heritage List for a variety of reasons; but until now, there have been few precedents and no guidelines for nominations relating principally to astronomy. Identifying and defining criteria that demonstrate 'Outstanding Universal Value' in relation to astronomy is not a straightforward task. They must encompass a wide range of sites, from prehistoric monuments to modern observatories. Helping to establish such criteria is the IAU Working Group's top priority. As Ruggles says, "without such guidelines member states of UNESCO will have little motivation to put forward astronomical sites for the World Heritage List, since they will have very little idea of their chances of success".

The agreement between UNESCO and the IAU is designed to set the wheels in motion. As a result, astronomical heritage will become much better represented in the World Heritage List.

– End of Press Release –

4. Dictionary of Historical Astronomical Instruments

Commission 41's *Historical Instruments* Working Group (chair: Luisa Pigatto) is engaged in compiling a dictionary of historical instruments. The text will provide authentic information on various instruments, their correct name, their inventors, and use. This dictionary is expected to be of assistance in the AWHI mentioned above.

5. IAU archives

Commission 41's *Archives* Working Group (Chair: Ileana Chinnici) is currently engaged in a survey of existing archival documents in IAU founder countries (see WG Report).

6. Exhibition in collaboration with the Vatican Observatory

Some Italian members of Commission 41 are engaged in the organization of an exhibition *Astrum 2009* to be opened in October 2009 as a joint initiative by INAF Italian Institute for Astrophysics and the Vatican Observatory. The exhibition will display historical instruments, books and documents kept in the Italian Observatories and will be held in Rome at the Vatican Museums.

7. Observatoire de Paris

A group on history of astronomy is part of the Department *Systèmes de Référence Temps-Espace* (SYRTE). It is located at 61 avenue de l'Observatoire, F-75014, Paris, and is under the charge of Michel-Pierre Lerner. During the triennium the history of astronomy group comprised eight permanent researchers and as many associated researchers, working part-time or after retirement. The group's researches are briefly described below.

(i) Astronomy and cosmology during Renaissance and at the beginning of modern times - mostly under *Project Copernic*. A critical edition of the *De Revolutionibus Orbium Coelestium* is planned for 2009.

(ii) Astronomical studies for the period 17th-18th centuries – under *Project D'Alembert* – in the light of the publication of his *Euvres complètes*. Two volumes have already been published. The third and the fourth are expected to appear by the end of 2008 and the beginning of 2009. A *Colloque Grandjean de Foucy* was organized in 2007 at the Observatoire de Paris.

(iii) Astronomical studies for the period 19th and 20th centuries. A biography of Janssen was published in 2008 and four related seminars were organized. A book had earlier been published in 2005 on Arago and the speed of light.

(iv) Researches have been carried out, based mostly on the collections in the archives of Paris Observatory. These include inventories of Chinese documents, historical astrometry, history of the Observatory and related subjects, such as the metric system, time, etc.

(v) In addition to research papers, many activities as well as publications have been directed at laypersons. For list of publications, please contact Suzanne V. Débarbat.

8. ICOA conferences

In July 2008 the ICOA-6 Conference was held at James Cook University (Australia), with papers presented in sessions on Applied Historical Astronomy, Ethnoastronomy & Archaeoastronomy, Islamic Astronomy, The Emergence of Astrophysics, The History of Radio Astronomy, and 'Other Recent Research'.

During the triennium, two proceedings from earlier ICOA conferences were published: - Chen, K. Y., & Sun, X. (eds.) 2006, *Frontiers of Oriental Astronomy*, Proc. ICOA-2, (Chinese Science and Technology Press),

- Chen, K.-Y., Orchiston, W., Soonthornthum, B., & Strom, R. (eds.) 2006, Proc. *Fifth International Conference on Oriental Astronomy* (Chiang Mai University).

9. History of astronomy graduate studies at James Cook University

Since 2006, Commission 41 Committee members, Wayne Orchiston (Australia) and Brian Warner (South Africa) and WG *Historic Radio Astronomy* member Richard Wielebinski (Germany), along with Ian Glass (South Africa), Kim Malville (USA), Bruce Slee (Australia), Richard Stephenson (UK) and Richard Strom (Netherlands), have been involved in developing off-campus internet-based part-time doctoral and masters programs in history of astronomy at James Cook University (JCU), Townsville, Australia. Eighteen students are currently enrolled in doctorates, and eight students have completed masters degrees in history of astronomy. During 2006-2008 the Centre for Astronomy at JCU ran three invitation-only mini-conferences on history of astronomy. The Centre also continued to produce the *Journal of Astronomical History and Heritage*.

Rajesh K. Kochhar
secretary of the Commission