Letter of Intent

Name of the Commission
History of Astronomy
Commission category
Regular / Inter-Division
Parent Division
Division C (but see below, Div. E G and J)
Proposer
Rajesh Kochhar (India)
Co-proposers
Xiaochun Sun (China)
Ray Norris (Australia)
David Valls-Gabaud (France)

Rationale

Established in 1948, Commission 41 on History of Astronomy has been an active and influential unit of the Union. In view of its impressive track record and future plans, benchmarked against the IAU Commission Reform Guidelines, it indeed seeks renewal in the new scheme of things. (In the following C41 is used as an abbreviation for the existing as well as proposed Commission.)

Dedicated to promoting rigorous and contextual studies in all aspects of the history of astronomy worldwide, C41 has been active at various levels: in its own sphere, in joint programs with other Commissions within IAU, and in collaboration with non-IAU agencies, such as UNESCO or ICOMOS (International Council on Monuments and Sites). In the future also, C41 will serve as a forum for discussions, debates, interaction and collaboration among members of the IAU, among astronomers in general, and all scholars interested in systematic studies of various aspects of human interaction with their cosmic environment.

Justification

As the IAU is an internationally respected body of professional astronomers, its support for the history of astronomy enhances the credibility of this discipline in the eyes of science establishments of individual countries. Indeed, the IAU and the International Union of History and Philosophy of Science (IUHPS http://iuhps.net/) have contributed significantly towards establishing history of astronomy (and science) as science rather than history.

C41 presents IAU's historical face to the outside world. In 2001, C41 officially became a joint Commission of the IAU and the IUHPS under the name ICHA (Inter-Union Commission on History of Astronomy). All members of C41 are *ipso facto* members of ICHA, while provision has been made for the admission of non-IAU members. ICHA receives grant-in-aid from IUHPS. Notably, the Organising Committee of C41 serves ICHA as well.

Current membership

Geographically, C41 membership is well distributed. Its 366 members are drawn from 49 countries; 60% of C41 membership comes from eight countries (USA, Australia, Germany, France, India, Korea, UK, and China), the remaining 40% of members represent as many as 41 countries, from Argentina and Armenia to Uzbekistan, the Vatican and Vietnam.

Need for more than one parent Division

For closer interaction with practitioners of modern astronomy and astrophysics, it will be appropriate if C41, while being primarily affiliated to Div. C, can be additionally affiliated to Div. E (Sun), Div. G (Stars), Div. B (Facilities, technologies and data science) and Div. J (Cosmology). We have so far not taken up the question with any Division.

Highlights of past and current activities

C41 brought out six newsletters during 1997-2000 and another twelve during 2001-2011. It maintains an active and detailed website (http://www.historyofastronomy.org/). C41 has been engaged not only in scholarly studies by its members, but has also made its services and expertise available to the IAU in general and the scientific and cultural world at large.

As Owen Gingerich, the then C41 President, explained, the 500th birth anniversary of Copernicus in 1973 '*provided an unprecedented opportunity for the recognition of the history of astronomy as a serious discipline*'. When archaeoastronomy was a newly emerging discipline, C41 organised a session on '*Megalithic Astronomy: Fact or Speculation*' at the 1976 General Assembly '*which drew the largest number of members of other Commissions*.'

In more recent times, in 2005, through the efforts of C41, the `*Struve arc has been officially recognised as an outstanding part of World Cultural Heritage'*. At the 2003 Sydney General Assembly, the IAU approved a C41 resolution celebrating 2009 as the **International Year of Astronomy** in commemoration of the 400th anniversary of the first astronomical use of the telescope by Galileo.

At the General Assemblies, C41 as a whole and its Working Groups have been organising scientific meetings on their own and in collaboration with other Commissions. At the 2009 Rio de Janeiro General Assembly, C41 organised a Special Session on '*Astronomy Education between Past and Future*' (in collaboration with C46) and on '*Accelerating the Rate of Astronomical Discovery*' (jointly with C5).

An initiative by C41 (through its Working Group on Historical Instruments) which was endorsed by C46 and C55 and Division XII, led to a five-day International Conference on '*Astronomy and its Instruments before and after Galileo*', in Venice (September-October 2009) jointly organised by INAF/Astronomical Observatory (Padova) and the IAU.

Similarly, C41 members organised, and participated in, the IAU Symposium 260 on '*The Role of Astronomy in Society and Culture*' at UNESCO Headquarters, Paris, in January 2009, just following the inauguration of

the IYA2009. Likewise, the IAU Symposium 278 on '*Archaeoastronomy and Ethnoastronomy: Building Bridges between Cultures*', Lima, Peru, January 2011 was also driven and organised by C41 members.

The wide scope of C41 activities was obvious at the 2009 Beijing General Assembly, where the Commission activities included sessions on: '*Expeditions and Field Observations'; 'Discovery and Classification in Astronomy*'; '*Extended Case Studies of Key Astronomical Heritage Sites*'; '*Conservation and Protection of Heritage*'; '*Historical Astronomical Instruments: Observatories and Sites*'; and '*Radio Source Counts and Cosmic Evolution*'.

Members of C41 publish original research. An international peer-reviewed journal, *Journal of Astronomical History and Heritage,* was founded in 1998 and is edited by a chair of one of the C41 Working Groups. Many senior members of C41 in their individual capacity serve on its editorial board. This adds to the well-established *Journal for the History of Astronomy*, with nearly half a century-long history, where C41 members have acted, and still act, as editor and advisory editors.

Working Groups

There are currently five working groups under C41: '*Archives*', '*Historical Instruments*', '*Johannes Kepler*', '*Transits of Venus*' and '*Astronomy and World Heritage*'. A related working group is on '*Historic Radio Astronomy*' which is placed under C40. We are supportive of its continuation. From among the five C41 Working Groups (WGs), the one on '*Transits of Venus*' was event-bound and can therefore be terminated. The other WGs have been working well and need to be continued at least till 2019, the IAU centennial year. Although details will be provided in the Full Proposal, some important points are summarised here.

Preserving, safeguarding and expanding the archives are essential tasks for carrying out and promoting research in history of astronomy. Established in 1991, the WG on *Archives* is entrusted with this duty. An important ongoing project deals with the archival materials related to the establishment of IAU in founder countries. The WG on *Historical Instruments* was set up in 2000. Its recent work includes the design of a permanent exhibition at the Anhui Provincial Museum on a group of astronomical instruments unearthed from the tomb of Marques Ruyin of the Han Dynasty in China (165 BCE), as well as a co-operative effort with *InFocusAsia* in filming a documentary on the history of time measurement and keeping in ancient China. WG on Kepler is busy editing a volume titled `*Reading the Mind of God: Johannes Kepler and the Reform of Astronomy*', containing chapters by the world's leading Kepler specialists.

The WG on *Astronomy and World Heritage* arose as a consequence of the creation of the Astronomy and World Heritage Initiative in 2004 by UNESCO's World Heritage Centre. In October 2008, UNESCO signed a Memorandum of Understanding with the IAU, '*as a result of which the IAU has become integrally involved in the process of advancing the initiative*'. The IAU in turn entrusted the responsibility of fulfilling its obligations under the MoU to C41, which responded by setting up a Working Group on Astronomy and World Heritage. Working with ICOMOS, this group produced the "*Thematic Study on the Heritage Sites of Astronomy*" in 2010, and helped create the portal, which was launched publicly during the Beijing General Assembly.

These four WGs should be supplemented with the creation of a new one, which is mentioned in the next section.

Plan for the next 6-9 years

- C41 will prepare a time-bound plan to bring out research and review material commemorating the IAU's 100 years in 2019;
- Studies in history of astronomy outside of documentation will be encouraged. This would include materials of ancient astronomy from rock art to architecture, dance and songs, myths, etc. As mentioned above, C41 would like to constitute a Working Group focused on the closely related area of *Cultural Astronomy*, including the disciplines of *Archaeoastronomy and Ethnoastronomy*. At the same time, existing Working Groups will be given more momentum;
- Special efforts will be made to persuade non-IAU historians of astronomy to post their results/news, events etc. on the C41 website;
- In recent years, history of radio astronomy (which is a modern research area) was chosen as a focus area. Similarly, other modern areas will be identified for historical studies in collaboration with relevant Commissions;
- Non-western countries will be encouraged to document their engagement with modern astronomy;
- C41 will play a more active role in bringing out publications, both with a pure academic and an outreach approach;
- More efforts will be made on building a database of historical astronomical observations and measurements in all cultures. This would include astronomical tables, star catalogues, star maps, images, records of celestial phenomena, etc;
- Astronomy is a symbol of the collectivity and continuity of humankind's cultural heritage. For promoting astronomy worldwide, '*scientific*' astronomy and '*cultural*' astronomy need to be placed in a composite context. Post-Copernican astronomy itself needs to be repositioned in a more extended evolutionary sequence;
- C41 has always been a progressive, forward-looking entity. From its early-day focus on astronomers, observatories and instruments, it has effortlessly moved to address wider questions of human engagement with the cosmic environment. It is ready and well-equipped to meet challenges that will certainly arise in the years to come.