COMMISSION C3 HISTORY OF ASTRONOMY

HISTOIRE DE L'ASTRONOMIE

PRESIDENT Christiaan Sterken
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COMMISSION C3 WORKING GROUPS

Inter-Commission C1-C3-C4 WG Archaeoastronomy and

Astronomy in Culture

Inter-Commission C1-C3-C4 WG Ethnoastronomy and

Intangible Heritage

Inter-Union (URSI), Inter-Commission

B4-C3 Functional WG Historical Radio Astronomy

Inter-Union IUHPST/ICHA-C3 IUHPST Commission for

History of Astronomy

TRIENNIAL REPORT 2021-2024

1. Background

IAU Commission C3 (History of Astronomy) started in 2015 as a natural continuation of the previous IAU Commission 41 for History of Astronomy, which was established in 1948 and which was very successful in supporting research on the history of astronomy.

Commission 41 organized and sponsored workshops and conferences, promoted research collaborations, formed specialist Working Groups and fostered the publication of members' research in the history of astronomy.

2. IAU Commission C3 and the International Union of History and Philosophy of Science and Technology

IAU Commission C3 is the primary constituent and coordinating arm of the Inter-Union Commission for History of Astronomy (ICHA), which is based in the International Union of History and Philosophy of Science and Technology (IUHPST).

3. Activities of Commission C3 during the past triennium

3.1. Conferences and Workshops

No face-to-face meetings have been possible in 2021 due to the Covid-19 pandemic. Other conferences and workshops scheduled in 2021 that involved C3 were cancelled.

3.2. ICHA (represented by IAU-C3) and CHAMA Symposium

ICHA and IAU-C3 organized a successful Symposium during the 26th International Congress of History of Science and Technology in July 2021. The theme of this Symposium "Art, image, and astronomical knowledge" was proposed by Christiaan Sterken and was endorsed by the Organizing Committee of C3. The programme of the Symposium was developed by Sara Schechner (President of ICHA) together with Yunli Shi (President of the Commission on the History of Ancient and Medieval Astronomy – CHAMA). The meeting addressed the question whether stand-alone images found in art can possibly serve as reliable and quantifiable evidence for explicating past observations of natural phenomena such as sunspots, solar eclipses, aurorae, comets, constellations, and crucial aspects of the Earth's past climate. Twenty speakers compared knowledge acquired by images (paintings, rock art, etc.) with knowledge acquired by words (descriptions, reports), by empirical methods (experiment, measurement, observation) and by formulas (theory, computer models).

3.3. The IAU XXXI General Assembly 2022, Busan (Korea)

Commission C3 supported the Division C Days in Busan (Korea) during the IAU General Assembly 2022. On August 5 and 8, Division C organized a two-day meeting titled "Towards inclusion in astronomy education, outreach, history, and heritage". This inperson plus remote meeting dealt with the following themes:

- (a) Day 1: Beyond the pandemic: a discussion of lessons learned and new opportunities in Astronomy Education and Outreach in the post-Covid era, and
- (b) Day 2: Respecting astronomy history and heritage: a discussion on the intersection of culture, science and social movements.

4. C3 Working Groups

Working Groups were a key factor in the success of C3 and its predecessor C41 for more than two decades. The Division C Steering Committee supported the formation of three C3 WGs, all of which are Inter-Commission WGs. The three C3 WGs (on Archaeoastronomy and Astronomy in Culture, chaired by Steve Gullberg; Ethnoastronomy and Intangible Heritage, chaired by Duane Hamacher; and Historical Radio Astronomy, chaired by Richard Schlizzi) were successful in fostering research and publications, organizing meetings, and maintaining up-to-date lists of publications in their respective fields since the XXXth IAU GA. A consortium of Working Groups Ethnoastronomy and Intangible Astronomical Heritage and Archaeoastronomy and Astronomy in Culture have now applied for Commission status to become Commission C5 Cultural Astronomy.

5. Outreach

Though outreach is not explicitly mentioned as a Commission C3 task, we have supplied indirect support for IAU Office for Astronomy Outreach by providing answers to general questions from the public at large. Two interesting questions were relayed to C3.

Commission C3 also received a draft proposal of a resolution about changing the

names of the Magellanic Clouds in such a way that any new names do not include words that refer to Ferdinand Magellan, to geometric aspects (*i.e.*, large and small), or to meteorological phenomena (*i.e.*, cloud).

The adjectives Large/Small and Cloud solely refer to their visual appearance – thus, the angular extent on the sky – and not to any physical size (just like constellations have no physical meaning). Cloud has been a common term in astronomy for a long time, just as nebula and interstellar dust cloud, and should not be interpreted as a reference to the Earth-bound meteorological sight.

The OC feared that a new nomenclature will be simply ignored by most astronomers, while the general public might not understand and might not be empathic with the objective. It will be a waste of time to try to convince professional astronomers (even the general public) of the need to drop the names that are of so common use. Moreover, renaming LMC and SMC will lead to practical problems when implemented in databases, and the historical literature will become harder to read, preserve, and teach.

- 5.1. Commission C3 Focus Meeting at the XXXII IAU GA (FM 6, Cape Town, 2024) For the occasion of the XXXIIth IAU General Assembly in August 2024 in Cape Town, the SOC of IAU Commission C3 has organized a two-day Focus Meeting "History of Astronomy in South Africa: The Late Modern Period" on a range of subjects on the history of astronomy in South Africa. The topics are entirely within the remit of Commission C3, and are also of interest to other IAU Commissions and Working Groups. The topics cover:
 - (a) history of astronomy for the sake of history, i.e., as studied by historians of science,
- (b) history of astronomy for the sake of combining historical observational data with modern ground-based and space-based observations, and
- (c) history of astronomy for the sake of enriching our understanding of the mutual impacts on, and the reciprocal influences between local cultures and the astronomical institutions and their activities.

The meeting intends to concentrate on people, instruments, and projects during the last two centuries -i.e., the period since the establishment of the Royal Observatory at the Cape of Good Hope. Strong emphasis is put on the outstanding scientific results that were achieved in South Africa notwithstanding the unparalleled extreme hardships and difficulties endured by the late nineteenth- and twentieth-century astronomical and technical personnel. Speakers will also embed aspects of education, outreach and cultural diversity in the core science that they will present.

The purpose of this meeting goes far beyond revealing South Africa's rich astronomical heritage: documenting the content and value of these unique archives may eventually result in funding opportunities to carry out research projects in the history of science, and even invoke citizen-science teams in the data mining of the rich databases.

The Scientific Organizing Committee consists of Piet van der Kruit (Chair), Sara Schechner, Virginia Trimble, Siramas Komonjinda, Elizabeth Griffin, Françoise Launay, Alina Eremeeva, Ian Glass, Michael Burton, and John Hearnshaw. The Focus Meeting is directed by Christiaan Sterken.

The Coordinating Division is Division C (Education, Outreach, and Heritage), and one other Division is involved, viz., B (Facilities, Technology, and Data Science). The meeting covers scientific activities in the following additional IAU Commissions and Working Groups: C1 Astronomy Education and Development, C4 World Heritage, B2

WG Preservation and Digitization of Photographic Plates, B6 Astronomical Photometry, EC WG Women in Astronomy, and Div B WG Time Domain Astronomy.

6. Grants

The IUHPST has provided some funding that the Organizing Committee of Commission C3 can distribute to early-career scholars to defray the costs of attending meetings relevant to the history of astronomy. The following grants have been allotted:

- (a) Four grants covering the early-bird registration fee were bestowed to participants of the 26th IUHPST International Congress (for participation in our symposium, "Art, image, and astronomical knowledge"), and one grant was allotted to a PhD student to participate at the "Astronomical Observatories and Chronometry: Time, Science and Instruments (18th–20th Century)", La Chaux-de-Fonds, Switzerland, December 2021.
- (b) Three grants covering the early-bird registration fee/partial travel support were bestowed to participants of the XLI Scientific Instrument Symposium "The Past, Present, and Future of Scientific Instrument Studies", 19–23 September 2022 at the National Hellenic Research Foundation, Athens.
- (c) Three grants covering the early-bird registration fee/partial travel support were bestowed to participants of the XLII Scientific Instrument Symposium "Through Ages, Cultures, Concepts: Instruments in Collections, Books, Archives", September 18–22, 2023, hosted by Commission C3 SOC member Ileana Chinnici at the INAF–Osservatorio Astronomico di Palermo, Sicily.
- (d) About half a dozen registration fees for remote participation at the XXXII IAU GA in Cape Town will be made available to early-career scholars.

7. Conclusion and future plans

Commission C3 currently has 281 Members, and 5 Associate Members, some of whom will become IAU member in 2024.

The following key activities will be focussed on during the coming triennium:

- (a) the SOC of C3 will continue the management of the IUHPST/ICHA/C3 grant scheme,
- (b) the C3 Project Group for Historical Instruments, Archives, and Observatories will play a stronger role, and put forward a project for the Commission,
- (c) the publication of a proceedings volume describing the history of astronomy in south(ern) Africa based on the presentations and discussions during FM6, and
- (d) the Commission will continue to develop the web portal for the history of astronomy. The present situation is that we have acquired the former Commission 41 web domain historyofastronomy.org, and that we have paid LCN.com for a 10-years renewal until August 26, 2032. The webhosting by Combell.com has been paid for three years until May 2026. This dedicated website has a much wider scope that the IAU Commission C3 website (iau.org/science/scientific_bodies/commissions/C3/info/), and serves as a complement to the latter.

The scientific activities of Commission C3 are truly Division-wide, and cover – besides history of astronomy – various *ad hoc* aspects of outreach, education and cultural astronomy. The SOC of Commission C3 expects the Commission to be renewed for the 2024–2027 triennium.

Christiaan Sterken
President of the Commission