

COMMISSION C3**HISTORY OF ASTRONOMY****PRESIDENT**

Wayne Orchiston

VICE-PRESIDENT

Christiaan L. Sterken

ADVISOR (PAST PRESIDENT)

SUN Xiaochun

SECRETARY

Sara Schechner

ORGANIZING COMMITTEEIleana Chinnici, LEE Eun Hee, Jay M. Pasachoff,
Pieter van der Kruit**COMMISSION C3 WORKING GROUPS**

Div. C / Commissions C1, C3, C4

Archaeoastronomy and Cultural Astronomy

Div. C / Commissions C1, C3, C4

Ethnoastronomy and Intangible Heritage

URSI-IAU INTER-UNION WORKING GROUP

Div. B / Commission B4, and

Div. C / Commission C3

Historical Radio Astronomy

ANNUAL REPORT 2019**1. Introduction**

The Commission was created in 2015 during the major IAU restructuring, and evolved out of Commission C41 (History of Astronomy) that had been formed in 1948 (see Kochhar et al., 2015). C41 was a highly-successful Commission, in no small part due to a number of dynamic Working Groups (Orchiston, 2019). The main goals of Commission C3 (History of Astronomy) are:

- (1) To raise the historical consciousness of IAU members.
- (2) To record and promote the history of the IAU.
- (3) To encourage C3 members and others who are not members of the IAU to carry out research, where relevant through local, national and international collaborations.
- (4) To encourage and support research in a wide range of fields within the general history of astronomy arena, not just widely-recognised mainstream areas but also 'niche areas' like Archaeoastronomy, Astronomical Archives, Ethnoastronomy, the Emergence of Space Astronomy, Historic Transits of Venus, the History of Astrophysics and Solar Physics, the History of Radio Astronomy; and Applied Historical Astronomy,
- (5) To establish a range of Working Groups and other groups in specialist areas of history of astronomy that can facilitate research by C3 members and others,
- (6) To encourage C3 members and others to present their research findings at conferences, seminars and workshops, in books, journals and newsletters and on web sites.
- (7) To liaise closely with IAU Commission C4 (World Heritage and Astronomy), in order to optimize international research on history of astronomy.
- (8) To organise or collaborate in organising national and international conferences, seminars and workshops on different areas of history of astronomy.
- (9) Where possible, to organise historical sessions at IAU General Assemblies.
- (10) To liaise closely with the Commission on Ancient and Medieval Astronomy within the International Union for History and Philosophy of Science and Technology in order to promote the worldwide development of research and related activities in history of astronomy.

2. Developments Within the Past Year

A major achievement during 2019 was the publication of the proceedings of the 2018 General Assembly Symposium on *Under One Sky – The IAU Centenary Symposium*, edited by Chris Sterken, John Hearnshaw and David Valls-Gaubad, all of whom are members of C3 (for biographical details, see Sterken et al. 2019, in Section 4, below). Other C3 members also contributed papers, in line with the Commission's goal (2) listed above.

Apart from establishing the three afore-mentioned WGs, the Commission began planning a number of specialist 'Project Groups' to bring like-minded researchers together and foster collaborations. This is

essential given the diversity of research projects carried out by C3 members and their wide-ranging geographical distribution.

Members of the Commission were active in research, often in collaboration with non-IAU members, through local, regional and international organisations and group. Some OC members of the Commission were very active in encouraging these research collaborations. This activity resulted in the publication of many books, chapters of books, review and research papers and book reviews. As an indication of diversity of topics researched, books on history of astronomy published by C3 members in 2019 are listed in Section 4, below. Meanwhile, the *Journal for the History of Astronomy* and the *Journal of Astronomical History and Heritage* continued as major publication outlets for members of C3 and others. As a further indication of the range of topics researched by C3 members and the nationalities of the authors, data on papers published by C3 members in the three 2019 issues of the *Journal of Astronomical History and Heritage* are summarized below in Table 1.

Table 1: Research papers by IAU members in the three 2019 issues of the *Journal of Astronomical History and Heritage*

Authors		Research Papers	
Country of Residence	No.	No.*	Topic(s) or Theme(s)
Australia	2	2	Australian ethnoastronomy; Early Australian radio astronomy
France	1	1	Galilean satellites of Jupiter
Greece	1	1	Greek archaeoastronomy
India	3	5	Classical Indian astronomy; Comets in Persian paintings; Great Comet of 1807; Great Comet of 1811; Indian ethnoastronomy.
Japan	1	1	Early Japanese radio astronomy
Mexico	4	1	Applied Historical Astronomy (star clusters)
Netherlands	1	1	Dutch astronomy (Minnaert)
Norway	1	1	Merz telescopes in Norway
Thailand	1	6	Early Australian radio astronomy; Early Japanese radio astronomy; Indian ethnoastronomy; Indian radio astronomer (Swarup); New Zealand ethnoastronomy; US observatory
USA	3	3	Early US radio astronomy; Transmission of <i>The Almagest</i> ; Western astronomical almanacs
Totals	18	22	

* Some of these research papers were co-authored.

In a bid to increase its membership, the Commission identified IAU members who belonged to C41 (History of Astronomy) before the 2015 restructuring but subsequently did not join C3, and invited them to join. Many were very surprised to discover that they had not automatically been made members of C3 in 2015. The Commission also identified suitably-qualified astronomers actively researching history of astronomy who were not already IAU members and encouraged them to apply for membership in December 2019.

The Commission established contact with the International Union for History and Philosophy of Science and Technology (IUHPST), which recognizes C3 as a joint IAU-IUHPST Commission. A grant was provided by the IUHPST towards the cost of a C3-sponsored conference in 2020, and there were discussions about a C3 program at the next IUHPST Triennial Congress, which will be held in Prague in July 2021.

Commission C was honoured when the President and one of his former doctoral students were awarded the 2019 Donald E. Osterbrock Prize by the Historical Astronomy Division of the American Astronomical Society for their book. *Eclipses, Transits and Comets of the Nineteenth Century: How America's Perception of the Sky Changed* (Cottam and Orchiston, 2015).

The Centre for Astrophysics at the University of Southern Queensland (Australia) continued to offer part-time, off-campus, internet-based PhDs in History of Astronomy, supervised by the President of C3.

Martin George (Australia, and an existing IAU member) and Jefferson Sauter (USA) graduated in 2019 and were encouraged to apply for the 2019 Division C PhD Prize. A new student, John Drummond (New Zealand) began his PhD in January 2020.

With great sadness, we report the death of the Japanese astronomer, Dr Yukio Ôhashi, who was an authority on the history of Indian, Tibetan, SE Asian, Chinese and Japanese astronomy. In April 2020 an Obituary (Orchiston and Nakamura, 2020) was published in the *Journal of Astronomical History and Heritage*.

3. Closing Remarks

The Commission has an active program scheduled for 2020 and through to the 2021 IAU GA. The membership drive will continue, and further research will be fostered by the Commission's WG and other research groups. COVID-19 permitting, the Commission will be involved in a number of conferences and workshops in 2020 and 2021.

For example, C3 proposed two different Focus Meetings for the 2021 IAU General Assembly, one of them in collaboration with C1 and C4. Jointly with the National Astronomical Research Institute of Thailand, C3 organised a conference on SE Asian history of astronomy that was held in Chiang Mai in February 2020. Currently, C3 is involved in planning participation in the following 2020 or 2021 conferences:

- History of Astronomy and Education in Africa (South Africa)
- International Conference on Oriental Astronomy, ICOA-10 (South Korea)
- 'Living Skies': Archaeoastronomy, Cultural Astronomy, Ethnoastronomy (Argentina)

The Commission also is involved in planning participation in the following 2020 workshops:

- SE Asian Ethnoastronomy: a joint IAU/NARIT/UNESCO Workshop (Philippines)
- The Vatican Workshop on History of Astrophysics (Vatican State)

Meanwhile, discussions with the IUHPST will continue re a C3 program at the Prague Congress in 2021.

Early in 2020, the President of C3 was involved in designing and teaching an intensive course on the History of Philippines Astronomy to under-graduate and graduate students and staff in the Department of Astronomy and Space Sciences at Rizal Technological University in Manila (Philippines). Likewise, the Secretary of C3, Sara Schechner, has been teaching a seminar for Harvard undergraduate and graduate students on the history, culture, and politics of American astronomy.

Finally, in 2020 research by Commission members and their international collaborators will lead to the publication of many new books and research papers. For example, the April 2020 issue of the *Journal of Astronomical History and Heritage* totals 228 pages and has just been published (on-line). It contains nine research papers, seven of which are authored or co-authored by C3 members.

4. References [The names of C3 members are shown in bold print]

- Andersen, J., **Baneke, D.**, and Madsen, C., 2019. *The International Astronomical Union: Uniting the Community for 100 Years*. Cham (Switzerland), Springer.
- Boice, D., and **Hockey, T.**, 2019. *Comets in the 21st Century: A Personal Guide to Experiencing the Next Great Comet*. San Rafael, Morgan and Claypool.
- Chinnici, I.**, 2019. *Decoding the Stars: A Biography of Angelo Secchi, Jesuit and Scientist*. Leiden, Brill.
- Cottam, S., and **Orchiston, W.**, 2015. *Eclipses, Transits and Comets of the Nineteenth Century: How America's Perception of the Sky Changed*. Cham (Switzerland), Springer.
- Dick, S.J.**, 2019. *Classifying the Cosmos: How We Can Make Sense of the Celestial Landscape*. Cham (Switzerland), Springer.
- Hunger, H., and **Steele, J.**, 2019. *The Babylonian Astronomical Compendium MUL.APIN*. London, Routledge.
- Kochhar, R., Sun, X., Ruggles, C., Belmonte Avilés, J.A., Corbin, B., Milone, E., Norris, R., Oigatto, L.** [sic should be **Pigatto**] and **Soma, M.** [sic should be **Sôma**] 2015. History of Astronomy under the auspices of the IAU. In Montmerle, T., (ed.), *Transactions of the IAU, Volume XXIXA – Reports on Astronomy: Commission Legacy Reports*. Cambridge, Cambridge University Press. Pp. 196–204.

- Luminet, J.-P.**, 2019. *Chroniques de l'Éspace*. Paris, Cherche Midi.
- Olson, R.J.M., and **Pasachoff, J.M.**. 2019. *Cosmos: The Art and Science of the Universe*. London, Reaktion Books.
- Orchiston, W.**, 2019a. The IAU C41 Working Groups and their contribution to international history of astronomy research. In Sterken, C, Hearnshaw, J.B., and Valls-Gabaud, D. (eds.). *Under One Sky – The IAU Centenary Symposium*. Cambridge, Cambridge University Press (Proceedings IAU Symposium No. 349). Pp. 332–356.
- Orchiston, W.**, and **Nakamura, T.**, 2020. Dr Yukio Ôhashi (1955–2019). *Journal of Astronomical History and Heritage*, 23, 209–217.
- Orchiston, W.**, **Sule, A.**, and **Vahia, M.** (eds.), 2019. *The Growth and Development of Astronomy and Astrophysics in India and the Asia-Pacific Region: ICOA-9, Pune, India, 15–18 November 2016*. New Delhi, Hindustan Book Agency and Springer.
- Proust, C., and **Steele, J.** (eds.), 2019. *Scholars and Scholarship in Late Babylonian Uruk*. Cham (Switzerland), Springer.
- Schechner, S.J.**, 2019. *Time of Our Lives: Sundials of the Adler Planetarium*. Chicago, Adler Planetarium.
- Steele, J.**, 2019. *Keeping Watch in Babylon: The Astronomical Diaries in Context*. Leiden, Brill.
- Sterken, C.**, **Hearnshaw, J.B.**, and **Valls-Gabaud, D.** (eds), 2019. *Under One Sky – The IAU Centenary Symposium*. Cambridge, Cambridge University Press (Proceedings IAU Symposium No. 349).
- van der Kruit, P.C.**, 2019. *Jan Hendrik Oort: Master of the Galactic System*. Cham (Switzerland), Springer.
- Wolfschmidt, G.**, 2019. *Astronomie Im Ostseeraum - Astronomy in the Baltic*. Hamburg, Tredition GmbH.

Wayne Orchiston
President of the Commission