

IAU Strategic Plan 2020–2030 and Division C Education, Outreach and Heritage

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Abstract. The IAU Strategic Plan 2020–2030 identifies five goals to guide the Union’s activities through this decade: to lead the global coordination of professional astronomy, to promote inclusive advancement of astronomy, to promote astronomy as a tool for development, to promote public engagement in astronomy, and, to stimulate using astronomy for primary and secondary education. Education permeates through all these goals – professional development, informal education and formal education for the very young through to the PhD level. For the IAU’s Division C, Education, Outreach and Heritage, the plan provides the foundation for supporting teachers worldwide who use astronomy as a tool for teaching science, the humanities and the arts, to promote astronomy education research, to engage life-long learners, and to engage everyone with our collective history and heritage to understand the Universe. I describe Division C’s remit, where we are now in this 3rd decade of the 21st century.

Keywords. Keyword1, keyword2, keyword3, etc.

1. Introduction

In 2018, the IAU Strategic Plan 2020–2030 was released. Its goals are summarized here:

- To lead the global coordination of professional astronomy,
- To promote the inclusive advancement of astronomy,
- To promote astronomy as a tool for development,
- To promote public engagement in astronomy, and,
- To stimulate using astronomy for primary and secondary education.

The IAU has nine divisions, of which six are focussed on specific science research areas. Three divisions, A, B and C, might be considered supporting or service divisions as their purview is broad, and necessary for the promotion of the astronomical sciences.

Division C Education, Outreach and Heritage objectives are:

1. to support teachers worldwide who use astronomy as a tool for teaching science, the humanities and the arts,
2. to promote astronomy education research
3. to engage life-long learners
4. to engage everyone with our collective history and heritage to understand the Universe.

2. Division C education, outreach and heritage

This Division's activities are broad and wide ranging, with its members active in:

Education – from primary to tertiary (university) levels and include formal (in school) and informal (out of school) education, informed by astronomy education research.

Outreach – communicating astronomy with the public

Heritage – the legacy of tangible astronomical artefacts and structures and the intangible attributes of astronomy in our cultural histories (past and present), as well as the history of astronomy.

Division C promotes astronomy in developing countries and has an interest in maintaining dark skies the absence of which affects education, outreach and cultural practices as well as research.

The Division's governing body consists of a President, Vice President, and a Steering Committee of six members plus the four commission presidents and an Advisor, who is often the past president. All of these individuals are elected by the Division members.

Commissions focus their activities within an area; thus each of the four commissions within Division C have their own remits: Astronomy Education and Development (C1), Communicating Astronomy with the Public (C2), History of Astronomy(C3) and World Heritage and Astronomy (C4). Additionally, the IAU allows interdivision commissions, and Divisions C and B support Commission B-C Protection of Existing and Potential Observatory Sites, which spans the interests of the two divisions.

Commissions have an Organizing Committee, a President and Vice President, who are elected by the Division Members. Working groups are normally part of a commission and are organized by to carry out one or more programs and projects; they have a chair or co-chairs. Additionally, working groups may find that their programs span more than one commission, and thus form intercommission working groups. The parent commissions may belong to different divisions. The working groups are the heart of the Division; members are encouraged to actively participate.

In response to the Strategic Plan 2020-2030, in 2018 the Division restructured its working groups to support the goals of the new strategic plan and in anticipation of the establishment of the Office of Astronomy for Education. We established an open proposal process with defined criteria, and Working Group proposals were reviewed by the Steering Committee. One of the happy consequences of this process was the elevation of the Working Group Astronomy for Diversity and Inclusion from Commission C1 to become a working group of the IAU Executive Committee.

The opportunity to propose for new working groups or propose to continue existing working groups occurs every three years, normally occurring in the few months before the General Assembly. Although the 2021 General Assembly was postponed to 2022 due to the COVID-19 pandemic, the business year cycle was still maintained.

2.1. *Commissions and working groups*

The final complement of commissions and their working groups for the 2018-2021 triennium are listed here. Please visit the webpages of Division C, its commissions and working groups for more information.

- 1) Astronomy Education and Development (C1)
 - Astronomy Education Research and Methods
 - Astronomy Competitions for Secondary School Students
 - Astronomy Education Resources (AstroEdu)
 - Network for Astronomy School Education (NASE)
- 2) Communicating Astronomy with the Public (C2),
 - CAP Conferences
- 4) History of Astronomy(C3)

- 5) World Heritage and Astronomy (C4).
 - Astronomical Heritage in Danger
 - Windows to the Universe: Classical and Modern Observatories

2.1.1. Intercommission working groups

Division C supports the following intercommission working groups

- C1-C3-C4 WG Archaeoastronomy and Astronomy in Culture
- C1-C3-C4 WG Ethnoastronomy and Intangible Astronomical Heritage
- C1-F2-F3-H2 WG Education and Training in Astrobiology
- B7-C1 WG Achieving Sustainable Development within a Quality Lighting Framework
- B4-C3 WG Historical Radio Astronomy (Inter-Union IAU-URSI)

2.1.2. Division and inter-division working groups

Some working groups have projects that are within the overall remit of a division or overlap with another division's interests. Within Division C these are:

- WG Star Names
- C-E WG Solar Eclipses

3. Keeping the division Dynamic

Key to keeping the division dynamic are the Division's individual and associated members who number 2384 active members, of which 182 are junior members. All members are encouraged to actively participate in the working groups, especially junior members and early career astronomers. The division's members include astronomers, historians, professional educators and communicators, embracing research and practice in education, outreach and tangible and intangible astronomical heritage.

The Division coordinates activities with the four IAU Offices: Astronomy of Astronomy for Development (OAD), Office for Astronomy Outreach (OAO), Office for Young Astronomers (OYA) and the recently established Office of Astronomy for Education (OAE). The origin of these offices are partially in the precursor to the Division; connections between the Division and the Offices continue. In particular, OAO and Commission C2 work closely together on the CAP (Communicating Astronomy to the Public) conferences, which are held every two to three years, and Commission C1 has a role supporting the OAE through its emphasis on education research and the newly formed online Astronomy Education Journal

Rewarding Excellence: Ph.D. Prize

Rewarding research is vital for encouraging junior scholars, and one way is recognize outstanding achievement. Nominations and self-nominations for the Division C Ph.D. prize are accepted annually from any country for thesis topics in:

- Thesis topics in the remit of the Division
- Astronomy Education Research
- Astronomy Education Practice
- Outreach and Informal Education
- History of Astronomy
- Cultural Astronomy (including ethnoastronomy and archaeoastronomy)
- Diversity, Equity, and Inclusion (DEI) in astronomy

Details of the prize are found at https://www.iau.org/science/grants_prizes/phd_prize/

Communicating: Conferences

Promoting astronomy education, outreach, history and heritage also involves communicating and sharing results. To this end, the Division supports international symposia as

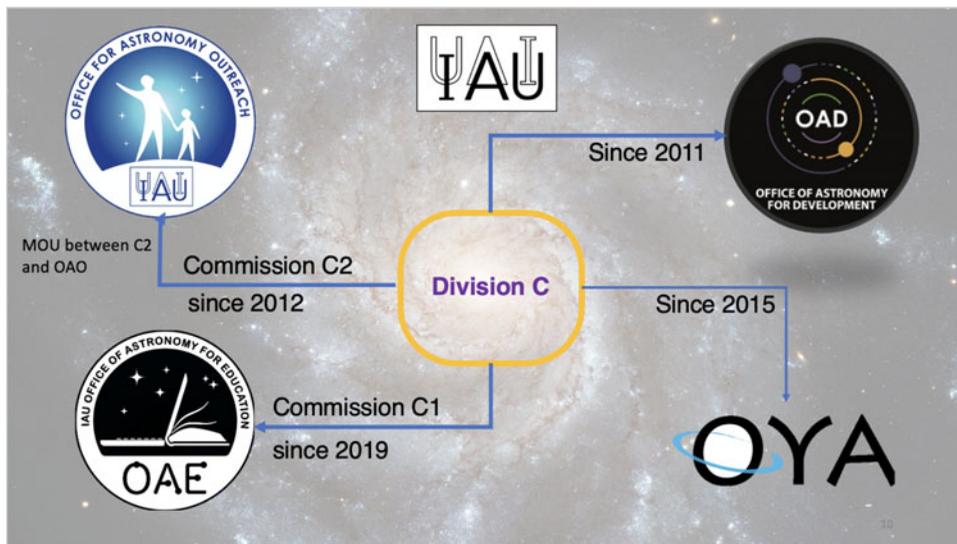


Figure 1. The four IAU Offices and Division C.

well as ancillary activities (e.g. outreach events, education workshops) at IAU scientific conferences. Recent IAU Symposia supported by Division C include:

- IAUS 367 Education and Heritage in the Era of Big Data in Astronomy – the first steps on the IAU 2020–2030 Strategic Plan, Argentina (this symposium)
- IAUS 358 “Astronomy for Equity, Diversity and Inclusion – a roadmap to action within the framework of the IAU centennial anniversary, Japan
- International Symposium on Education in Astronomy and Astrobiology, Netherlands
- Joint IAU and European Astrobiology Campus Ancillary activities at IAU science conferences
- Division Days at IAU General Assemblies

4. The future

In the few years since the publication of the IAU Strategic Plan 2020-2030, the Division’s activities have been focused in support of its goals, and in preparing for the next decade. I anticipate the Division will expand into scholarly research in the theory and practice of education (formal and informal) and outreach, and continue collaborations with the OAE, OAO, OAD and OYA to promote astronomy in all countries. While the Division attracts a broad cross-section of astronomers, we still need to encourage early career as well as professionals in related fields to engage in the activities of, and, with the Division. This is important for developing new ideas, methods and approaches to the diverse projects in the Division’s portfolio. all continents

These are exciting times!

Dr. Susana Deustua is a scientist at the Space Telescope Science Institute in Baltimore, MD USA, working on the Nancy Grace Roman Space Telescope. She is currently the president of the IAU Division C, Education, Outreach and Heritage. Her research interests are supernova cosmology, absolute calibration, and solar system studies. She has a long-term interest in astronomy education, and served for six years as Director of Education of the AAS. As a member of the Supernova Cosmology Project, she shared in the 2015 Breakthrough Prize in Fundamental Physics and the 2007 Gruber Cosmology Prize.