

**DIVISION C
COMMISSION 55**

**COMMUNICATING ASTRONOMY
WITH THE PUBLIC**
*COMMUNIQUER L'ASTRONOMIE
AVEC LE PUBLIC*

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HISTORY & TRIENNIAL REPORT (2012-2015)

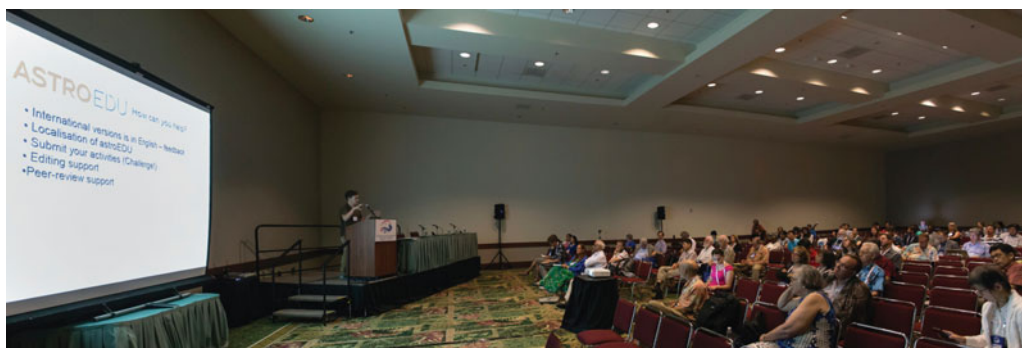


Figure 1. Pedro Russo at the Division C business meeting at the 2015 General Assembly.

1. Abstract

The IAU Division C Commission 55, Communicating Astronomy with the Public, played an active role in Union affairs within Division C, Education, Outreach and Heritage. The International Astronomical Union (IAU) vested considerable responsibility for its public outreach efforts in Commission 55 (C55), Communicating Astronomy with the Public. This article briefly recounts the origin and history of C55 over the past decade, and describes the work of C55 until it became Division C Commission C.C2 in 2015. As stated on our website, <http://www.communicatingastronomy.org>, C55 was founded on the principle that “it is the responsibility of every practising astronomer to play some role in explaining the interest and value of science to our real employers, the taxpayers of the world.” While this was true a decade ago, when the Working Group that eventually became C55 first took shape, it is even more true today, when funding for the astronomical sciences (and science more generally) is under threat on nearly every continent.



Figure 2. Lars Lindberg Christensen at the 2015 General Assembly.

2. Rationale

Communicating astronomy with the public, often simply referred to as public outreach, is critical to the success of our field: a society that does not care about astronomy will not fund it, and society cannot care about astronomy unless it knows about it. Astronomers must communicate not only the knowledge of our Universe that we derive from research, but also their role in contributing to economic growth through scientific and technical innovation, such as that involved in building sophisticated telescopes and instruments. And beyond that, astronomers, like other scientists, have a duty to promote and defend the processes and values of science – including rational enquiry and the paramount importance of evidence – which are now seemingly disregarded in many quarters. For example, a survey [1] from the Pew Research Center and the American Association for the Advancement of Science found that in the United States, only 42% of adults say that scientists generally believe that the Universe was created in a single violent event, the Big Bang, while 52% think that scientists are generally divided on this issue. If the astronomical community won't work to combat such misunderstandings, how can we expect anyone else to do it for us?

3. Ancient History

IAU Commission 55 had its origins in a conference titled *Communicating Astronomy to the Public*, held in Washington, DC, in October 2003. This CAP meeting was a successor to a more general one, *Communicating Astronomy*, held in Tenerife in February 2002. Both meetings brought together an international group of producers of astronomical information (research scientists), public information officers (communications coordinators and/or spokespersons affiliated with research institutions, funding agencies, space missions, etc.), and mediators (science journalists and popular writers; staffers from museums, planetariums, and national parks; operators of commercial websites focused on astronomy; and science educators).

Following the 2003 conference in Washington an IAU Working Group was set up to coordinate further work on three outcomes from the meeting: the Washington Charter for *Communicating Astronomy with the Public* (note the intentional change of preposition, from “to” to “with”), an online repository of astronomy-communication resources (now the *Virtual Astronomy Multimedia Project*, or VAMP [2]), and a series of every-other-year CAP conferences. At the 26th IAU General Assembly in Prague in August 2006,

the working group became Commission 55, Communicating Astronomy with the Public, under Division XII, Union-Wide Activities. The presidents were Ian Robson (2006–2009) and Dennis Crabtree (2009–2012). Members of C55 and attendees at the CAP 2005 and CAP 2007 conferences took many leadership roles in planning, coordinating, and executing the International Year of Astronomy 2009 (IYA2009) [3].

4. Recent History: OAD and OAO

The enormous impact [4] of IYA2009 led the IAU to recognise the importance not only of scientific research, but also of science outreach, to the health of the profession. To build on the success of IYA 2009, the IAU adopted a Strategic Plan plan to establish the Office of Astronomy for Development (OAD) [5], based at the South African Astronomical Observatory in Cape Town, and subsequently created the Office for Astronomy Outreach (OAO) in 2012, based at the National Astronomical Observatory of Japan in Tokyo. The OAD set up three task forces to drive global activities using astronomy as a tool to stimulate development. Task Force 3 (TF3): *Astronomy for the Public*, is dedicated to drive activities related to communicating astronomy with the public.

In Beijing, to further align the structure of the IAU with its Strategic Plan and to better match the organization of the Union to the activities of its national and individual members, attendees at the General Assembly approved a sweeping reorganization that replaced the earlier 12 divisions with 9 new ones. C55 was integrated in Division C *Education, Outreach, and Heritage*.

Although nearly all the IAU members and others involved in both OAD and OAO were active members of C55 (which worked in close partnership with the OAD and OAO), C55 has had its own, distinct, role. The OAO serves primarily to conduct outreach on the IAU's behalf, while OAD focuses on “underserved” communities. C55, on the other hand, served to record, generate, and exchange knowledge of “best practice” techniques in astronomy communication among astronomers and communicators. In this way, C55 served as a bridge between, and supporter of, both communities.

C55 was a think/do-tank that convened the astronomy communication community and seeded initiatives to explore new ways to communicate astronomy with the public. We focused on community initiatives, such as Special Sessions and Focus Meetings, and new trends, and less on implementing projects, as that naturally fell more to OAD TF3 and the OAO. That said, C55 played an important role in conceiving and implementing activities during the extremely successful International Year of Astronomy 2009 and collaborated with the OAO and OAD TF3 to do the same for the International Year of Light 2015, for which the IAU was coordinating the “Cosmic Light” cornerstone project. The C55 mission was:

- To encourage and enable a much larger fraction of the astronomical community to take an active role in explaining what we do (and why) to our fellow citizens.
- To act as an international, impartial coordinating entity that furthers the recognition of outreach and public communication on all levels in astronomy.
- To encourage international collaborations on outreach and public communication.
- To endorse standards, best practices, and requirements for public communication.

Functions of C55 OC members in the OAO and OAD:

- Sze-leung Cheung, Office of Astronomy Outreach (OAO) Coordinator, Tokyo (Japan),
- Ian Robson, Office of Astronomy for Development (OAD), Chair Task Force 3 (UK), *ex officio*,

• Carolina Ödman-Govender, Office of Astronomy for Development (OAD), Vice-Chair Task Force 3 (South Africa), *ex officio*.

5. C55 Working Groups

Most of the work of C55 was accomplished via eight Working Groups that were created for specific purposes. Here is a list of current C55 Working Groups, including their chairs and brief descriptions of their accomplishments and future goals. For more information, see <http://www.communicatingastronomy.org/workinggroups/index.html>.

5.1. *WG1 Communicating Astronomy with the Public Journal (CAPj)*

Chair: Georgia Bladon, Editor in Chief, CAPjournal

Created: 1 June 2007

Mission: To publish a free (to readers) peer-reviewed journal for astronomy communicators.

Deliverables: 3 issues/year

Members:

- Christensen, Lars Lindberg
- Koschny, Detlef
- Merín Martín, Bruno
- Russo, Pedro
- Char, Farid

This WG publishes CAPjournal (<http://www.capjournal.org>), an open-access, peer-reviewed journal for astronomy communicators that was launched in 2007. Since its first issue in October 2007, 18 issues have been published (as of December 2015). The current publication frequency is two-three issues per year. 2100 printed copies of each issue are distributed, with several thousand additional copies distributed in PDF format. The publication of the CAPjournal is a core function of C55. During the change of leadership of the Office of Astronomy Outreach from Sarah Reed to Sze-leung Cheung it was decided to change the Editor in Chief, CAPjournal to Georgia Bladon on a contractual basis. She has done a sterling job of continuing the publication. The IAU funds the printing costs and the cost of the Editor in Chief. ESO funds the distribution, the proofreading and other miscellaneous costs.

5.2. *WG2 Communicating Astronomy with the Public Conferences*

Chairs: Sze-leung Cheung and Oana Sandu

Created: 1 March 2005

Mission: To regularly convene producers of astronomical information, public information officers, and mediators worldwide for the interchange of ideas and practices.

Deliverables: An international conference at least every 2 years (including sessions during IAU General Assemblies, where applicable).

Members:

- Lars Lindberg Christensen
- Dennis Crabtree
- Pamela Gay
- Kevin Govender
- Silvia Torres Peimbert
- Pedro Russo
- Kaz Sekiguchi



Figure 3. Left: CAPjournal issue number 18; Right: Sze-leung Cheung at the IAU XXIX General Assembly.

- Jin Zhu
- Thierry Botti
- Kevindran Govender
- Marios Karouzos
- Sze-leung Cheung
- Doris Daou
- Helen Sim

This WG organizes the Communicating Astronomy with the Public (CAP) Conference, held approximately every other year (skipping years with an IAU General Assembly). CAP Conferences bring together members of all the C55 communities for week-long interchanges of ideas and best practices. Past conferences have been held in the United States, Germany, South Africa, Greece, China, and Poland, and the next conference is planned for Colombia (the first to be held in South America). CAP Conferences typically attract 100 to 300 active astronomy communicators and are lively, packed with information, and energizing for all participants. The last CAP conference was Poland [6] and the next will be in Medellin, Colombia in 2016. The planning is well under way and the conference is promising to be very exciting.

5.3. WG3 Outreach Professionalization & Accreditation

Chair: Rick Fienberg

Created: 31 August 2012



Figure 4. Left: The CAP2013 conference in Warsaw, Poland; Right: Rick Fienberg at the IAU XXIX General Assembly.

Mission: To bring a sense of professionalism and professional respect to the field of astronomy communication, to advocate for our needs as professional communicators, and to serve as a means for information sharing and networking.

Deliverables: A procedure to handle requests for IAU associate membership (presumably including several levels of accreditation) and methods/standards/requirements for achieving accreditation.

Members:

- Augusto, Pedro
- Chen, Dongni
- Crabtree, Dennis
- de Grijs, Richard
- Gay, Pamela
- Ödman, Carolina
- O'Donoghue, Aileen
- Pantoja, Carmen
- Reid, Michael
- Robson, Ian
- Russo, Pedro
- Sandrelli, Stefano
- Stavinschi, Magda
- Arcand, Kimberly
- Banyś, Tomasz
- Char, Farid
- Daou, Doris
- Nogueira, Salvador

The original motivation for the establishment of this WG was to explore the possibility of establishing a professional society for astronomy communicators. Such an organization would help bring a sense of professionalism and professional respect to the field, to advocate for our needs as professional communicators, to develop standards for outreach accreditation, and to serve as a means for information sharing and networking. As we explored our options, though, we realized that, to some extent, the ability to incorporate astronomy communicators into the IAU and C55 as Associates obviated the need for a separate organization. So this WG's primary goal switched to developing a procedure to handle requests for IAU C55 Associate status. This was done successfully, and we then added a number of very active astronomy communicators as Associates of C55. With

the Commission reform the issue of Associates is being re-discussed and will need some focused attention of this WG.

5.4. WG4 Public Outreach Information Management

Chair: Lars Lindberg Christensen

Created: 31 August 2012

Mission: To act as a facilitator enabling the small outreach information management community to gather around a common technical framework optimizing the synergy in the community.

Planned Deliverables:

- Describe one possible standard for EPO content management systems.
- Decide on standards for astronomy EPO products metadata.
- Write CAPj article.
- Bringing the major players in EPO information management together in an informal network. Arrange the first workshop for this network.

Actual accomplishments:

- The WG builds on the experience from a former C55 WG: Virtual Astronomy Multimedia Project. VAMP including the seminal reference report on metadata standards for astronomical images.
- The IAU, ESO, UNAWA, ESA Workshop on Public Outreach Information Management in Astronomy (March 2013).
- Presentation at CAP2013 by Pedro Russo & Lars Lindberg Christensen.
- Research & Development Articles:
 - Russo, Gomez et al. 2015: Peer-review Platform for Astronomy Education Activities [7]
 - Russo, Sommer et al. 2016 (in prep.) Search Engine Optimisation in Astronomy Outreach

Members:

- Accomazzi, Alberto
- Christensen, Lars
- Gomez, Edward
- Govender, Kevindran
- Heydari-Malayeri, Mohammad
- Sandrelli, Stefano
- Stavinschi, Magda
- Arcand, Kimberly

A key outcome of the CAP 2003 Conference was the establishment of an online repository of astronomy-communication resources, which has now evolved into the Virtual Astronomy Multimedia Project. Building on this experience, C55 established a new WG to act as a facilitator, enabling the small outreach information management community to gather around a common technical framework. The WG issued a seminal reference report on metadata standards for astronomical images, which are now used by ESO, NASA, and others, and organized an IAU/ESO/UNAWA/ESA Workshop on Public Outreach Information Management in Astronomy in March 2013. The work is being continued by Robert Hurt at IPAC, USA, for the Astropix project and at the ESO Supernova Planetarium & Visitor Centre in Garching, Germany.



Figure 5. Audience at the Division C meeting at the IAU XXIX General Assembly.

5.5. *WG5 Research in Outreach*

Chair: Pedro Russo

Created: 31 August 2015

Mission: The main goal of this working group is to facilitate the link between the scientific community working on science communication issues, in particular related to astronomy and space exploration, and the community of science communication practitioners and the astronomical community more broadly. The WG will focus on research on public engagement with astronomy/scientists' practices of communication with non-specialist audiences. Science communication is by itself a field of research and there is a lot done at the academic world with general public audiences such as public engagement strategies/methods/perceptions, which has not so far been brought to the world of practitioners.

Deliverables: One CAP journal article – Short report on new research/findings produced in the field of science communication that can be used to inform best practices of communication of Astronomy with the public; Results of a big public communication survey conducted with the IAU Members.

Members:

- Marta Entradas
- Lars Lindberg Christensen
- Hidehiko Agata

5.6. *WG Washington Charter for Communicating Astronomy with the Public*

Chair: Dennis Crabtree

Created: 1 February 2004

Mission: To promote the importance of astronomy outreach and communication by disseminating information about the Washington Charter and to seek endorsements from funding agencies, observatory directors, department heads and deans, and other employers of astronomers.

Deliverables: At least 10 new institutional and/or individual endorsements of the Washington Charter, and some follow-up with previous endorsers to identify/address any problems that may have arisen.

Members:

- Fienberg, Richard
- Daou, Doris

Status: Was terminated in 2015.

5.7. *WG New Media*

Chair: Pamela Gay

Created: 31 August 2012

Mission: To nurture a professional astronomy culture that utilizes social media to disseminate science effectively.

Deliverables:

- Review one social media channel and its effectiveness per issue of CAPj. (Submissions will follow the standard procedure for accepting articles. Proposed articles should be discussed and agreed with the Editor in Chief.)

- Create and publish a map of which social media can be accessed where in the world (depending on the target audiences).

- Publish success stories of efficient social media usage.

- Publish discussions on ways to use social media to create professional development experiences for people at underserved universities (e.g., seminars in Second Life, Google hangouts).

- Publish information about best practices in research dissemination on wiki pages.

- Creating an IAU record of social media accounts of professional astronomers (as part of the already existing members profiles).

- Astro Comm Journal Club? (Twitter, to be adapted from scicommjc.wordpress.com)

Members:

- Augusto, Pedro
- Conti, Alberto
- Forero Villao, Vicente
- Gomez, Edward
- Karouzos, Marios
- Melbourne, Jason
- Merín Martín, Bruno
- Ödman, Carolina
- Ortiz Gil, Amelia
- Reid, Michael
- Sandu, Oana
- Stübler, Johannes
- Wheeler, Pete
- Yamani, Avivah

Status: Was terminated in 2015.

5.8. *WG New Ways of Communicating Astronomy with the Public*

Chair: Michael West

Created: 31 August 2009

Mission: **Deliverables:**

Members:

- Bartlett, Jennifer
- Conti, Alberto
- Engelbrecht, Chris
- Gomez, Edward
- Lubowich, Donald
- Melbourne, Jason
- Minier, Vincent

- Reid, Michael
- Rodríguez Hidalgo, Inés
- Sandrelli, Stefano
- Ali, Ismandy
- Dalley, Mike
- Sandu, Oana
- Stübler, Johannes
- Wheeler, Pete

Status: Was terminated in 2015.

5.9. *WG Communicating Heliophysics*

Chair: Carine Briand

Created: 31 August 2009

Mission: Promote the outreach activities of the heliophysics community and encourage our people to participate in the activities of C55.

Deliverables: One article/year on heliophysics outreach in CAPj; attendance by at least one WG member at every CAP meeting; possible/desirable: maintenance of a robust WG website with resources for heliophysics outreach

Members:

- Berrilli, Francesco
- Mason, Helen
- Walsh, Robert
- Winter, Lisa
- Yan, Yihua
- Gilbert, Holly

Status: Was terminated in 2015.

6. Looking Ahead

C55 met at the 2015 GA in August 2015 and will meet again as Division C Commission C.C2 at the CAP 2016 Conference in Colombia. We anticipate that we may wish to create some new WGs to meet new challenges for the coming triennial periods. We welcome the “refresh” afforded by Commission Reform and to celebrate and encourage the continuation of the work being done under the auspices of C55 to advance the goals of the Union.

References

- [1] <http://www.pewinternet.org/files/2015/01/PI.ScienceandSociety.Report.012915.pdf>
- [2] <http://www.virtualastronomy.org>
- [3] <http://www.astronomy2009.org>
- [4] http://www.astronomy2009.org/resources/brochures/detail/iya2009_summary/
- [5] <http://www.astronomyfordevelopment.org/>
- [6] <http://www.communicatingastronomy.org/cap2013/index.html>
- [7] <http://arxiv.org/abs/1501.07116>