

COMMISSION 1

EDUCATION AND DEVELOPMENT OF ASTRONOMY

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COMMISSION 1 WORKING GROUPS

Div. C / Commission C1 WG

Theory and Methods in
Education

Div. C / Commission C1 WG

Network for Astronomy School
Education-NASE

Div. C / Commission C1 WG

Astronomy for Equity and
inclusion

Div. C / Commission C1-F2-F3-H2 WG

Education and Training in
Astrobiology

Div. C / Commission B7-C1 WG

Achieving sustainable development
within a quality lighting framework

Div. C / Commission B2-C1-C2 WG

Data Driven Astronomy Education
and Public Outreach-DAEPO

TRIENNIAL REPORT 2015-2018

1. Introduction

During 2015-2017 the OC of the C1 worked to define the new goals and future plans of the IAU Commission and the role of the professional astronomers in reaching the IAU proposed objectives in education for the next few years. In this sense, the C1 has established new objectives and a new way of working, including new collaborative working groups and activities, such as:

A. Inter-division BC: Protection of Existing and Potential Observatory Sites.

B. Inter-commission:

- B7-C1 Achieving Sustainable Development within a Quality Lighting Framework
- C1-F2-F3-H2 Education and Training in Astrobiology.
- C4-C1 Intangible Astronomical Heritage

These bodies, are working to produce new materials and tools and to establish better contacts with the public.

On the other hand, a new role was established for the C1 as a partner of the Offices for Astronomy Development, for Young Astronomers and of Astronomy Outreach. These activities promote the future development in scientific research of the methodological transfer of astrophysical knowledge towards different audiences.

The C.C1 has increased the participation of the IAU members in different tasks, and brought together researchers in the field of education, members of "teacher training schools", and specialists in disabilities by the creation of new and special working groups. New associated members were included to reach these new goals.

Moreover, we have tried to improve the communication among the members of C1 through the web site and the Newsletter (edited by Larry Marschall (second period of service) and Kathy Eastwood), inviting new collaborators and asking for special notes and articles of interest.

C.C1 was part of concrete activity devoted to the design and manufacture of interactive modules for the dissemination of science, especially for the disabled. The C.C1 also is working on the design and the development of FabLabs to produce scale models in using 3D printers. These activities are a clear benefit to society.

With regard to transference from events in Education, members of the OC were part of the organizing and-or scientific committees of the following meetings:

1. Workshop on Astronomy Beyond the Common Senses, in cooperation with C.C1s Working Group 3, Astronomy for Equity and Inclusion, and the LOC of the LARIM (Latin American Regional IAU Meeting) 2016. This meeting was held on October 8, 2016 in Cartagena of Indias, Colombia.

(more information at: <http://wai.unal.edu.co/information/>)

2. Seminar on Practical Teaching of Astronomy, NASE American Region, covering Observation, Models and Archeology. This meeting was held in Bogota, on October 11, 2016, with the attendance of representatives from NASE in Latin America.

3. Workshop on Education and Dissemination of Astronomy in Esquel, Chubut, Argentina (the first was held in Cordoba in 2009) on the occasion of the annular solar eclipse, visible from Patagonia on February 26, 2017. This meeting had the support from the IAU and CONICET Part of this activity is also related to the production of teaching materials for schools.

(more information at: <http://sion.frm.utn.edu.ar/WDEAII/>).

Jay Pasachoff, Xavier Jubier and Charles Fulco gave invited talks, and Fred Espenak (NASA) was part of the activity. More than 2000 participants were part of the event. The eclipse was in 2017, but the organization started in January of 2016.

4. During 2016 the OC of C.C1 worked hard organizing the Symposium of Astronomy and Astrobiology Education: Theory, Methods, Impacts and Future Directions, which was held on July 3-8, 2017, in Utrecht, Netherlands. (Chair: B. Garcia, co-chair: Muriel Gargaud. Coordination by Division C Education, Outreach and Heritage and Division H Astrobiology. More information at: <http://ise2a.uu.nl/>).

Finally, C.C1 members actively collaborated with the Division C WG-Star Names. The WGSN has established and is maintaining a new catalog of IAU star names, with the first set of 227 approved names published on the IAU website. This WG produced one

of the IAU highlights of the year see:

<https://www.iau.org/news/pressreleases/detail/iau1603/>.

2. Developments in the last period

During 2017 the C.C1 has worked in the consolidation of the Commission and the WGs, the organization of several meetings, workshops, teleconferences and the production of special resources in the frame of their objectives.

The most important achievements during the last year are:

1. The announcement of the first international comparative list of astronomical words in sign languages and the translation to English and Spanish of the book *Les mains dans les étoiles*, compiled by Dominique Proust. This announcement was made at the IAU Web Site:<https://www.iau.org/news/pressreleases/detail/iau1706/>

and recognized as a goal by the Secretary of the Union at the eNewsletter:

<https://www.iau.org/publications/e-newsletters/html/64/>

(Please, see also the report of the WG Astronomy for Equity and Inclusion, by Amelia Ortiz-Gil).

2. The International Symposium on Education of Astronomy and Astrobiology performed in collaboration with Utrecht University (see the report of the WG Education and Training in Astrobiology, by Muriel Gargaud).

3. The organization and participation at the WDEA II (Workshop on Education and Outreach of Astronomy in Argentina) in Esquel, Argentina, during the Annular Solar Eclipse, on February of 2017. The event included the participation of Jay Pasachoff, Fred Espenak and Xavier Jubier and more than a thousand participants from Argentina, USA, France, Uruguay, Chile, Colombia (see: <http://sion.frm.utn.edu.ar/WDEAII/>).

4. The great response to collaborate with the C1-Newsletter (see the last issue of the Newsletter (86) at <http://iaucc1.frm.utn.edu.ar/wp-content/uploads/2012/11/IAUNL86.V2.pdf>)

Finally, we remark the WG NASE, a very successful activity. Prior to January, 2018, it has organized 104 international courses in 23 countries and 47 courses in co-operation, created 35 NASE local working groups, has 500 NASE members (46 IAU members and 454 non IAU members), and involved 4966 teachers around the world. C.C1 has started a conversation at the IAU-Secretary level to study the possibility of transforming NASE into a IAU School, organized by NASE in different countries but with the support of IAU. This would be at the same level than ISYA but without funding, with each country assuming the costs of the school.

We also recognize the work of many persons who contributed to the Education and Development of Astronomy all over the globe. This included associated members from different countries, of different genders, and in different WGs.

3. Closing remarks

After the description of the objectives and achievement of all the WG of C1, we propose that the WG will continue for the period 2018-2021, with emphasis in:

1. Continue to provide a forum for sharing educational research and spreading best practices for teaching astronomy.
2. Help disseminate teaching materials, and where possible make translations available.
3. Spread our activities and meetings to areas of the world that have traditionally been under-served.
4. Organize a follow-up to the very successful Utrecht meeting.
5. Support the dynamic and growing field of astrobiology in our future meetings and activities.

Beatriz García
president of the Commission