IAU DIVISION C EDUCATION, OUTREACH, AND HERITAGE NEWSLETTER
January, 2022

ANNOUNCEMENTS

astroEDU seeks editor-in-chief.

astroEDU is a peer-reviewed platform which seeks to improve astronomy education activities. The astroEDU team is looking for an editor-in-chief with a minimum of 2 years experience in astronomy education and/or science education. The role will involve overseeing the peer-review process for the entire life-cycle of each activity, from submission to publication, and providing consistency in the quality of published activities.
Read more: https://astroedu.iau.org/en/editor-advert/

Reflexive Behaviour: How Publication Pressure Affects Research Quality in Astronomy.

Read the full article: https://www.mdpi.com/2304-6775/9/4/52

Grants for Early Career Scholars.

The ICHA **(**Inter-Union Commission of the History of Astronomy) has secured modest funds to help defray meeting costs (such as registration fees) for early career scholars wishing to attend meetings relevant to the history of astronomy. Grants can only be given to those presenting a paper or poster at the meeting. If you wish to apply for a grant, please send an email to Christiaan Sterken, President of Commission C3 (csterken@vub.ac.be). The application process is managed by the Organizing Committee of IAU Commission C3.

Recognition of the outstanding work of the OAD over the last 10 years.

South African National Research Foundation released recently the report of the external review of the IAU Office for Astronomy Development (OAD). The review panel found the performance of the OAD outstanding and commended the office and its network. The panel recommended that the OAD continue to be hosted in South Africa until 2027.
Read more about the external review and the full report:
https://www.astro4dev.org/2021/12/17/external-review-panel-lauds-oads-work-and-recommends-continuation/
Watch the inspiring video showing the potential of OAD and astronomy for making our world a better place:
https://www.youtube.com/watch?v=7dQY4JA8Ids

Call for Proposals to Celebrate the United Nations International Day of the World's Indigenous Peoples.

The IAU Office for Astronomy Outreach invites proposals for projects relating to the United Nations International Day of the World's Indigenous Peoples, which will be celebrated on 9 August 2022. The Under One Sky Call for Proposals seeks to support projects that use cultural astronomy, astronomy outreach and communication to recognize indigenous knowledge and respect indigenous learning systems with a rights-based approach to indigenous learning. The deadline for applications is 31 December 2021.
Read more: https://www.iau.org/news/announcements/detail/ann21054/

CAPjournal: Call for Peer-Reviewers.

The Communicating Astronomy with the Public Journal (CAPjournal) is a free peer-reviewed journal for astronomy communicators, currently issued twice a year and distributed both online and in print, published by the IAU Office for Astronomy Outreach. We invite interested Division C members to join our pool of peer-review experts to help ensure the high quality of CAPjournal.
Read more: https://www.capjournal.org/issues/index.php

Meet the IAU Astronomers! Call for Interest to IAU Members.

The "Meet the IAU Astronomers!" programme encourages teachers, informal educators, amateur astronomers, and others to organize virtual meet-ups with an IAU astronomer to talk with students, parents

and the general public about astronomy, the importance of astronomy for society, and choosing astronomy as a career. Since April 2020, over 200 IAU astronomers have joined the programme and we would like to invite all interested Division C members to join our growing network.
Read more: https://www.iau.org/public/meettheiauastronomers/

"100 Hours of Astronomy" Concludes Successfully in Over 60 Countries.

The world celebrated "Together Under One Sky" during 100 Hours of Astronomy, in over 60 countries, from October 1–4, 2021. 100 Hours of Astronomy welcomed astronomy projects including professional–amateur astronomer meet-ups; activities instigating critical thinking in young children and seniors; citizenship and global collaboration; dark and quiet skies awareness through virtual tours, talks, sky observation activities, lectures, art projects, etc.
Read more: https://www.iau.org/public/oao/100-hours-of-astronomy/

Online Astronomy@Home Awards.

As many of us turned online to stay connected with our astronomy communities at the beginning of the pandemic, the IAU Office for Astronomy Outreach wished to recognize the incredible and inspiring efforts of various event organizers carried out worldwide during the subsequent months. Astronomy@Home Awards 2020 received over 400 events between April and August 2020 globally. The selected 50 events from 31 different countries are distributed across five awards categories.
Read more: https://www.iau.org/public/iauoutreachaward/

Selected Projects for National Outreach Coordinator Funding Scheme 2020/2021.

The International Astronomical Union Office for Astronomy Outreach (OAO) is pleased to announce the selection of three projects in the second year of the IAU National Outreach Coordinator (NOC) Funding Scheme. The selected projects involve National Outreach Coordinators from 17 countries and will focus on key areas of astronomy outreach, from building a global platform to sharing astronomy outreach events, to taking astronomy to refugee camps or using art as a tool for astronomy outreach.
Read more: https://www.iau.org/news/announcements/detail/ann21035/

Telescopes for All 2021.

The 2021 Telescopes for All project received 225 applications from 54 countries with active support from the IAU National Outreach Coordinators (NOCs). The selected proposals will bring telescopes to socially deprived communities in Poland; help tackle educational disparities and improve access to STEM for women and girls in Botswana and Mauritius; reach rural areas in Malaysia and refugee camps in Jordan, to name but a few.
Read more: https://www.iau.org/public/telescopecollaboration/

Proceedings of the IAU 367 is now ready.

Read more: https://www.cambridge.org/gb/academic/subjects/physics/astronomy-general/education-and-heritage-era-big-data-astronomy-iau-s367-first-steps-iau-20202030-strategic-plan

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NEWS AND UPDATES ON RECENT DIV C ACTIVITIES

Division C Working Group of Key Initiatives

The new Division C WG IAU Key Initiatives in Education, Outreach and Development (KI) was proposed by the IAU Officers and the Division C OC, and has as a main goal encompassing a number of valuable, consolidated programmes promoted by the IAU in connection with Education, Outreach and Development. These successful initiatives, spread over the world, have also a set of tools for evaluation and measurement of impact, and their actions are maintained and will continue for a long time, thanks to the support of different institutions, ambassadors and volunteers. The proposal can be considered an IAU Legacy, will include very well-known initiatives such as UNAWE, GTTP and NASE and

maintains the relationship between the IAU, the programs and different audiences assuring the global dissemination of the activities and the creation of new cooperation and development networks. This proposal is part of the construction of a potential Education Alliance.
Read more: https://www.iau.org/science/scientific_bodies/working_groups/334/

Working group NASE (Network for Astronomy School Education)

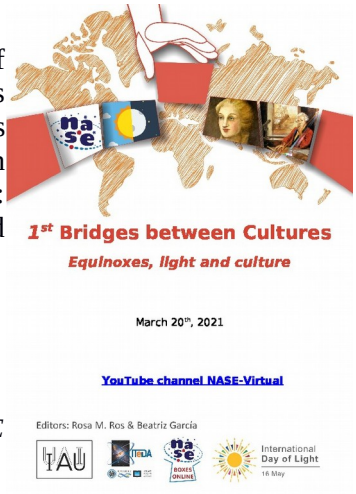
1. Courses for teachers (on-line/face to face/hybrid).

During COVID, the NASE team began to teach courses on-line and continued with face-to-face courses in countries were this was possible. At present, they are teaching hybrid courses with some activities on-line and others face-to-face in order to achieve all advantages of both approaches. In some cases, teachers do not have internet access and we organize meetings in one school with the best connections or in other cases the on-line process offers more options for instructors from abroad. During 2021, 55 courses were organized and 9 new countries integrated (India, Turkey, São Tome and Principe, Algeria, Venezuela, Togo, Mauritania, Benin and Greece).
Read more: http://sac.csic.es/astrosecundaria/es/cursos/realizados/reglados/ListaCursosNASEReglados.php

Group photo of NASE courses 227 in the Dominican Republic (left, online), 249 in Algeria (middle, face-to-face), and 258 in Orihuela, Spain (right, Hybrid). Credits: NASE

2. "Bridges between cultures" meeting (on-line)

In order to promote the cultural astronomy in NASE courses, a new line of work started including an on-line session among several NASE countries. This meeting took place on March 20, 2021 and the main topic was cultural events related to the equinox. The new project International Day of Light with UNESCO for 2021 was also introduced. The following countries participated: Austria, Mexico, Canada, USA, Senegal, South Korea, Iran, Argentina and Spain. A book of proceedings is in preparation.
The on-line session is available on youtube:
https://www.youtube.com/playlist?list=PLEfe8n238mNQYlleullsbC3vhB49ud5__



Front page of the Proceedings book (in prep.). Credit: NASE

3. Herschel experiment (on-line).

This project was integrated with the International Day of Light of UNESCO which took place from the March Equinox to the September Equinox. Teams of participants carried out the experiment in their schools. They hailed from 22 countries, including: Andorra, Argentina, Bulgaria, Dominican Republic, Finland, Germany, Greece, India, Indonesia, Iran, Lithuania, Mexico, Paraguay, Philippines, Portugal, Romania, Senegal, Spain, Sweden, Tanzania, Tunisia and Venezuela.
Read more: http://sac.csic.es/astrosecundaria/en/proyectos_con_unesco/experimento_herschel/ListaDocs.php

Herschel Experiment in Indonesia (left), Greece (middle), and Senegal (right). Credits: NASE

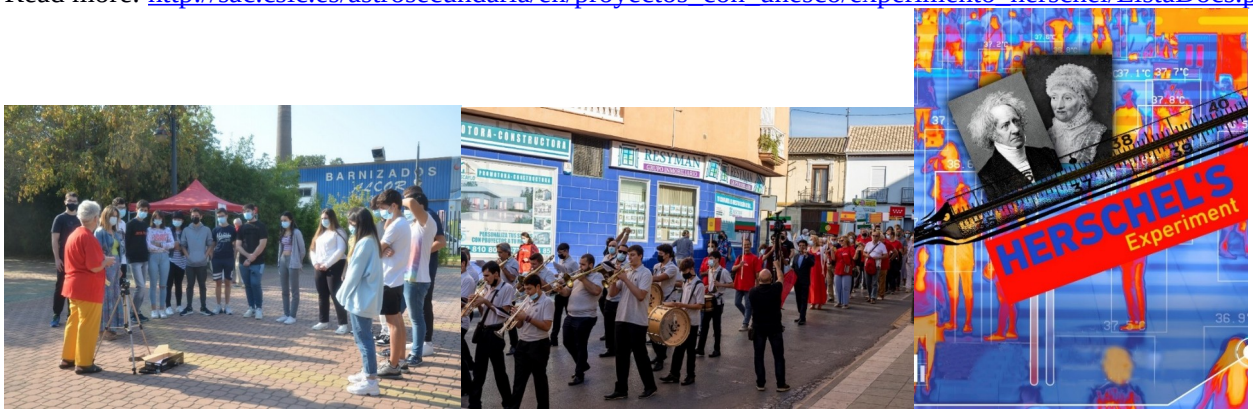
4. Herschel Closing Festival (on-line/face to face).

The final event of the Herschel Experiment of the International Day of Light of UNESCO took place on September 27 (on-line) and October 1 (face to face) in Atarfe, Spain, integrated into the final event of Ciencia en Acción – Science on Stage Spain.

The International Herschel Experiment Day welcomed participants from 22 countries, including Austria, Lithuania, the Philippines, India, Indonesia, Greece, Iran, Tanzania, Bulgaria, Romania, Tunisia, Portugal, Germany, Andorra, Spain, Senegal, Paraguay, Argentina, the Dominican Republic, Sweden, Venezuela and Mexico. A virtual visit to the National Observatory in Madrid was organized in order to visit the two small Herschel telescopes and the big one restored two years ago. The on-line session was broadcast through youtube.

In the face-to-face final event there were 8 tents distributed across the Atarfe city where 2500 students visited them and had the opportunity to discover the Herschel experiment and infrared light. Proceedings of both events are in preparation.

Read more: http://sac.csic.es/astrosecundaria/en/proyectos_con_unesco/experimento_herschel/ListaDocs.php



A group of students attending the Herschel experiment in Romania (left), the closing ceremony of the face-to-face final event in Atarfe (middle), and the cover of the book of proceedings (right). Credits: NASE

 # Comission 1: Astronomy Education and Development
(https://www.iau.org/science/scientific_bodies/commissions/C1/)

Sub-WG of Astronomy Day in Schools under the WG of Astronomy Education Research and Methods

1. Renewal and Continuation of the Astronomy Day (Every-Day) in Schools Program.

School teachers are always interested in examples of classroom practices that help ignite students' minds, and this is one of the focal points for the Astronomy Day in Schools (ADiS) program, under the WG of Astronomy Education Research & Methods of Commission C1.

The aim of ADiS is to collect a variety of astronomy education practices that teachers have used to encourage students to think and share these ideas in the classroom. By publicizing these practices, as a community we can help build and support teacher–teacher and school–school networks. This endeavor also helps stimulate discussions about how to encourage students to be proactive, interactive, and deep learners, and to help encourage teachers to foster collaborations, be autonomous and reflective practitioners.
The ADiS program originally started as an IAU100 Global Project with the vision of mobilizing the astronomical community to organize activities in schools. We are calling out again to the world to organize activities together, especially in conjunction with the vernal and autumnal equinoxes, and the summer and winter solstices. Equinoxes and solstices not only have astronomical significance around the world, but they are also important phenomena in the history of science, and they are connected to cultural events in various regions, making them suitable subjects for educational practice that combines science, history, culture, and STEAM education.
The call is intensified at the time of the equinoxes and solstices but reports of classroom astronomy education practices that stimulate students' learning are welcome at any time of the year. Therefore, the project is not limited to "a Day," but it is "Every-Day."
We will try to publish an annual e-report based on the registered practices, and we are working on getting the first issue out in early 2022.
The National Astronomical Research Institute of Thailand (NARIT) kindly hosts the website of the ADiS (since September 2021): https://adis.narit.or.th/. Please visit the website and share your practices and experiences.

Credit: ADiS hosted at NARIT.

 # Comission 3: History of Astronomy
(https://www.iau.org/science/scientific_bodies/commissions/C3/)

CHST 2021 symposium on "Art, Image, and Astronomical Knowledge" co-sponsored by ICHA and CHAMA (July 2021)
Commission C3, with the ICHA (Inter-Union Commission of History of Astronomy, a joint commission of the International Union of History and Philosophy of Science and Technology (IUHPST) and the IAU) and CHAMA (Commission on the History of Ancient and Medieval Astronomy), jointly sponsored a symposium at the Prague 26th IUHPST Congress on the theme of *Art, Image, and Astronomical Knowledge*.

The meeting addressed the question whether stand-alone images found in art (paintings, drawings, woodcuts, etchings, rock art, etc.) can serve as reliable and quantifiable evidence to explain past observations of natural phenomena such as sunspots, solar eclipses, aurorae, comets, constellations, and crucial aspects of the Earth's past climate. Fifteen speakers compared knowledge acquired from images (paintings, rock art) with knowledge acquired from words (descriptions, reports), through empirical methods (experiment, measurement, observation) and from formulas (theory, computer models). Examples ranged from the ancient and medieval world up to modern times and represented many cultures and geographic places.

Read more: https://hssonline.org/members-news/inter-union-commission-of-history-of-astronomy-grants-for-early-career-scholars-meeting-at-prague-congress-2021/
https://www.ichst2021.org/

Comission 4: World Heritage and Astronomy
(https://www.iau.org/science/scientific_bodies/commissions/C4/)

1. News about different astronomical heritage sites.

In the last few months, a series of relevant events happened related to the potential activities of the IAU C4, where members of C4 developed a series of activities related to different astronomical heritage sites. These include news about the following: Chankillo Archaeoastronomical Complex (250–200 BCE, Peru), the Paseo del Prado and Buen Retiro (Madrid, Spain) and the Royal Astronomical Observatory, Observatory of La Plata (Argentina), Hamburg Observatory, and Bosscha Observatory (Indonesia).
Read the full report: https://www.iau.org/static/science/scientific_bodies/commissions/c4/commission-c4-activity-report-2021.pdf

2. Talk on "Astronomy, Ireland and UNESCO World Heritage" by Michael Burton (Director of the Armagh Observatory and Planetarium and C4 vice-president).

Full talk: https://www.youtube.com/channel/UCgLHzRrpQNpQRCzqHROuyGA/live

3. Celebration of 200 years of Cape Observatory, South Africa.

On 20–23 October 2020 a virtual symposium was held to celebrate 200 years since the foundation of the Cape Observatory. This included a number of items of historical interest about several of the South African observatories. Proceedings including individual presentations can be downloaded from https://saao200.saao.ac.za.
Read more in the full report: https://www.iau.org/static/science/scientific_bodies/commissions/c4/commission-c4-activity-report-2021.pdf

4. Celebration of the 10th anniversary of the inscription of the First Byurakan Survey (Markarian Survey) in UNESCO's "Memory of the World" documentary heritage international register (https://www.bao.am/about/unesco/unesco.php).

Read more in the full report: https://www.iau.org/static/science/scientific_bodies/commissions/c4/commission-c4-activity-report-2021.pdf

5. "Talayotic Menorca: a cyclopean island Odyssey".

The first week of October, the candidature of "Talayotic Menorca: a cyclopean island Odyssey" was evaluated in situ by ICOMOS.
More read in the full report: https://www.iau.org/static/science/scientific_bodies/commissions/c4/commission-c4-activity-report-2021.pdf

Inter-Commission C.B7 (Protection of Existing and Potential Observatory Sites) (with the Executive Committee Working Group for Dark & Quiet Sky Protection)

1. The Dark and Quiet Skies for Science and Society II conference.

Many IAU C.B7 members were involved in the Dark and Quiet Skies II (D&QSII) conference, held October 3–7, 2021. It was hosted by the IAU, the UN Office of Outer Space Affairs, and the Government of Spain

(through the Instituto de Astrofísica de Canaria). D&QS II focused on the technical and political actions needed to implement the recommendations from D&QS l. Specifically, the topics concentrated on satellite constellations' impact on astronomy and society, artificial light at night, and radio astronomy. The conference was intended to be hybrid, but an erupting volcano on the Canary Island of La Palma forced the conference to be moved entirely online, to not use the resources needed on the island for its inhabitants. The conference program included invited talks as well as contributions selected through a call for abstracts. A total of 724 individuals, 32% of whom were women, registered to attend the conference; 77 countries were represented. On average 140 were attending at any one time. The results from the conference will be published by the end of 2021 and will be presented at the UN COPUOS STSC meeting in February 2022.
For additional Reading, please consult:
- Dark and Quiet Skies I Report: iau.org/static/publications/dqskies-book-29-12-20.pdf
- Dark and Quiet Skies I UN COPUOS Conference Room Paper:
https://www.iau.org/static/publications/uncopuos-stsc-crp-8jan2021.pdf

This image won a photography competition from the International Astronomical Union. All information about the image, including credits and description, is provided here: https://www.iau.org/public/images/detail/ann21047i/.

The image is also free to use, with credit. For more info see: https://www.iau.org/copyright/.

Credits: Torsten Hansen/IAU OAE

2. The SATCON2 workshop.

Many IAU C.B7 members were involved in the Satellite Constellation 2 (SATCON2) workshop on July 12–16, 2021. The primary goal of the online SATCON2 workshop was to develop specific, implementable paths to carrying out the recommendations from SATCON1. (The SATCON1 workshop, held June 29–July 2, 2020, identified the issues and recommended mitigations for the impact of satellite constellations on astronomy. See https://noirlab.edu/public/products/techdocs/techdoc003/). Over 550 people registered for the SATCON2 workshop. The workshop's two additional goals were to engage a considerably wider group of stakeholders in the conversations than had been present at SATCON1 and to explore existing policy frameworks and present ideas for development of policy capable of addressing an entirely new era in the exploration and use of space. In the couple of months before the workshop, four working groups (WGs) prepared draft reports relevant to the workshop's goals to present their findings at the workshop itself. Two of the working groups, Observations and Algorithms, explored some SATCON1 recommendations directly. The Community Engagement working group brought many new voices and perspectives to the issue, and the Policy working group examined regulatory framework and mitigation approaches from national, international, and industry viewpoints. The final combined report of all chapters is available.

Additional readings:
SATCON2 Executive Summary: noirlab.edu/public/products/techdocs/techdoc031
SATCON2 Working Groups Report: noirlab.edu/public/products/techdocs/techdoc033

Picture on the right shows the double star Albireo in Cygnus. All information and credits are provided here:
https://noirlab.edu/public/images/ann21021c/

Check out also a slightly older image taken with the Victor M. Blanco 4-meter Telescope:
https://noirlab.edu/public/images/iotw1946a/

An artist's impression (not to scale):
https://noirlab.edu/public/images/noirlab2022b/

Credits: Rafael Schmall

3. Briefings on the impact of satellite constellations on science and society.

Several IAU C.B7 members were involved in several briefings on the impact of satellite constellations on science and society. The briefings were provided to the NSF, the AURA Board, the NOIRLab Management Oversight Committee, the Office of Science and Technology Policy, the Board of Physics and Astronomy at the National Academy of Sciences (NAS), the Committee on Astronomy and Astrophysics at the NAS, the Space Studies Board at the NAS, the US National Committee for the IAU at the NAS, the Astronomy and Astrophysics Advisory Committee, the IAU Executive Committee, the Committee on Space Research (COSPAR), the FCC, the Satellite Industry Association, EAS, RAS, and the Commission Internationale de l'Eclairage (CIE).

4. Report to the UNOOSA Committee on the Peaceful Use of Outer Space.

Two IAU C.B7 members and members of the Executive Committee's Working Group on the Dark and Quiet Sky Protection Observers atended the UN COPUOS meeting in August 2021 on behalf of IAU. A presentation was made to the UN delegates to request a single agenda item dedicated to the topic of satellite constellations' impact on astronomy and society, artificial light at night, and radio astronomy. Initially consensus on the request for a single agenda item at the next meeting was not reached. However, in early November 2021, the main opposing country rescinded its objection and the possibility will be revisited for a single agenda item at the UN COPUOS Science and Technology Sub-Committee meeting in February 2022. We were also asked to help host a symposium on the topic at that time.

Inter-Division Working Group Star Names (WGSN)

1. WGSN Elections and New Task Groups.

In fall 2021, the WGSN held elections for the 2021–2024 triennium, including for the Chair and two newly created positions for Secretary and Chairperson of the Etymologies Task Group. Susanne Hoffmann was elected as new WGSN chair and Doris Vickers was elected as Chairperson of the Etymologies Task Group. Susanne Hoffmann brings expertise in the history of astronomy and Doris Vickers brings additional expertise in philology and archaeoastronomy. Both have helped considerably with the ongoing effort to research etymologies for IAU star names with aim to eventually posting the material. Eric Mamajek has stepped down as chair after the first six years of WGSN's existence but remains in the new Secretary role to support the WG's efforts. He will liaise with the newly formed Executive Committee WG Exoplanetary System Nomenclature and any IAU public naming campaigns.

There is interest in forming a new WGSN Indigenous Names Task Group. However there is far more interest than expertise on this subject within the WG. Although there is no formal chair yet, WGSN members Javier Mejuto, Clive Ruggles, and Duane Hamacher have kindly agreed to take the lead in working and recruiting on this subject. WGSN is hoping to recruit Indigenous astronomy experts to help with documenting celestial names and their etymologies. One issue is there are numerous bright stars, especially in the southern skies, that have no common name previously adopted by the IAU/WGSN, for which there may be Indigenous names that could be adopted for use by the IAU. If there are IAU members (or would-be affiliates) with

expertise and interest in Indigenous names of stars and asterisms, we encourage them to reach out to the IAU WGSN.
WGSN Triennial Report 2018-2021: https://www.iau.org/static/science/scientific_bodies/working_groups/280/wg-starnames-triennial-report-2018-2021.pdf