IAU Catalyst, December 2020

Information Bulletin

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Editorial

My three-year term as IAU General Secretary is coming to an end. It is time to start preparing to close and pass the testimony to my successor.

As incoming General Secretary on the last day of August 2018, I shared with you my enthusiasm for becoming more closely involved with the IAU. One reason was the IAU's recent ambition to use astronomy as a tool for development, education and communication, thus reaching a much wider audience, far beyond professional astronomers.

Even knowing that establishing the new Office of Astronomy for Education in such a short time would be a challenge, I also identified as one of the goals for the triennium to have the four IAU offices working and collaborating with each other. I am proud that this goal has been achieved — the IAU now has four fully operational Offices, working together harmoniously while pursuing their own goals as clearly defined in the IAU 2020–2030 Strategic Plan. I am also pleased to have achieved several other goals in my term as General Secretary, but I will leave for the next edition of Catalyst (June 2021) a brief note on this and some considerations for the future.

Early this year, we were caught in a dramatic and unexpected pandemic that almost brought the world to a stop. And even if it sounded like a fictional film scenario, it was indeed a harsh reality that surrounded us. Our usual way of living and working together suddenly became impossible. We had to learn new ways of proceeding, overcoming individual fears and common concerns. We had to react and be creative in order to continue living and working.

Altogether, 2020 has not been an easy year. Virtual communication and remote meetings have become the new reality, but this has also meant much more work than usual and, together with the additional stress of the uncertain situation, has soured institutional interpersonal relationships on several occasions. And, at the end of October, we still cannot foresee the end of this immense crisis.

Almost all IAU symposia scheduled for 2020 had to be postponed to 2021, and most other IAU activities and meetings had to be revised and new models reinvented in an attempt to mitigate the impact of the pandemic. Even the preparations for the 2021 General Assembly, so advanced in early January, have had to be revised. It will be postponed to August 2022, in Busan, South Korea. Our brave colleagues on the Local Organising Committee, with whom we are working closely, deserve our recognition for their resilience, without losing their enthusiasm even in such difficult conditions for the preparation of a GA.

But the crisis must be turned into an opportunity. An example is the "discovery" of the potential to hold large hybrid meetings. Although face-to-face meetings are invaluable for building personal and collaborative relationships, adding a virtual component to them can greatly expand

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participation and therefore make them more inclusive. This would allow the remote participation of many who would otherwise be excluded because of limitations on travel, be that because of geopolitical restrictions, family reasons, financial constraints, or simply lack of time. As the available technology allows virtual meetings with hundreds of participants, the IAU must learn from the crisis and from now on favour the hybrid model as a rule, even when face-to-face meetings are again possible, including the 2022 General Assembly. Such a policy, and the availability of live and remote streaming, would lead to much broader participation, also resolving limitations resulting from time zone differences — and, last but not least, would contribute to reducing the impact of mass travel on climate change.

Figure 1: Screenshot from the OAE Workshop. From the top left: Lina (OAO), Teresa (IAU), Markus (OAE) and Kevin (OAD)

Executive Committee 1

1.1 The IAU in the Next Triennium

Debra Meloy Elmegreen
IAU President-elect

We approach the next IAU triennium in a world significantly altered since the XXX General Assembly in Vienna. The IAU is driven by sharing astronomy, but that requires adapting to changing circumstances. The IAU was formed during the 1918 influenza pandemic. Now, with much of the world currently constrained by the coronavirus pandemic, the IAU Offices of Astronomy for Development, Young Astronomers, Education, and Outreach have united to organize shared digital astronomy resources. The OAD has funded special proposals to help alleviate the devastating consequences of COVID-19, from hygiene, equipment, and modeling, to online astronomy learning, training, and stress-relieving art/astronomy projects. These efforts will have practical applications beyond the pandemic.

The first IAU meetings a century ago brought astronomers together to discuss astronomical ideas and discoveries. This year, IAU symposia and other international meetings were forced to go online, but fortunately the requisite technology exists now. The XXXI GA in Busan will be postponed to August 2022 as a hybrid meeting with in-person and virtual options, and that will be a model for the future. Face-to-face exchanges are invaluable, but hybrid meetings offer opportunities to include astronomers who might not be able to travel for various reasons, including health, family and financial, and they could also reduce our carbon footprint.

Astronomy is a worldwide science. Global planning and cooperation are essential for enabling future astronomical discoveries, and will continue to be a priority of the IAU. Upcoming large ground and space observatories and their surveys require a broad international workforce. Access to these facilities and expertise in big data are critical for the next generation. Besides the International Schools for Young Astronomers, the IAU will co-sponsor workshops to train astronomers in the use of specific facilities. The Executive Committee Working Group (ECWG) on Global Coordination of Ground and Space Astrophysics focused this year's Kavli-IAU workshop in Cape Town on multi-messenger and transient astronomy. The ECWG on Dark and Quiet Skies, together with other organi-

zations, is making progress working with industrial leaders to ensure that our skies are protected for future generations of stargazers.

The IAU seeks to increase diversity and inclusion in astronomy. Our new Code of Conduct policies on ethics and anti-harassment cover all IAU functions so that everyone feels welcome. Diversity has different meanings in different countries, but one fact is clear: a more diverse and inclusive workforce fosters greater innovations through broader perspectives. The ECWGs on Women in Astronomy and on Equity and Inclusion have aided two recent projects: the 3-year International Science Council Gender Gap study examined the impact of gender in the scientific workforce, while the IAUS358 Springboard to Action provided recommendations for promoting equity, diversity, and inclusion. The OAE meanwhile focused its second Shaw-IAU Workshop on examining K12 education worldwide. The IAU will continue its efforts in these areas so that astronomy is seen as accessible by everyone.

With the Strategic Plan for 2020–2030 under way, the IAU embraces its expanded mission to promote and safeguard the science of astronomy in all its aspects, including research, communication, education and development, through international cooperation. The continued contributions of thousands of IAU volunteers will help us realise these aspirations together.

2.1 IAU Division A – Fundamental Astronomy

A matter of Space & Time

Daniel Hestroffer
President, IAU Division A

This Division is indeed fundamental to astronomy and astrophysics. Its Commissions and Working Groups — half of which are functional — deal with the definition and realisation of celestial coordinate systems, time scales, astrometry, celestial mechanics and ephemerides. The Division's activities cover the kinematics and dynamics of a large variety of celestial objects, from Earth and Solar System objects to exoplanet systems, stars and our Galaxy, and to very distant QSOs.

Division A traces its origins back to the beginning of the IAU itself in 1919, with activities in many of its Standing Committees. Anchored in the past, the Division has evolved significantly over time by including new concepts and monitoring new discoveries. Over many decades Division A has initiated or released a large number of recommendations, definitions, standards, and resolutions. Today, Division A has 1854 members, including the largest proportion of junior members among all IAU Divisions.

Our Division is by its nature very interdisciplinary, being in particular linked to other Divisions, other Unions (BIPM, CCTF, CCU, IERS, IAG, ITU, IVS, IUGG), amateurs and teachers. External institutions are contributing greatly to our activities by providing data and services.

IAU Symposia are the scientific flagships of the Union: Division A has coordinated several over the decades, reflecting the key research activities in the domain, and preparing for next-generation science. Our next Symposium IAUs 364 has been postponed until after the IAU 2021 General Assembly — when our community will gather during dedicated Division days and the Focus Meetings FM7 and FM10.

Among recent activities, we can point out the third realisation of the International Celestial Reference Frame (ICRF3), and the release of the Gaia DR2 catalogue that was key to many studies. No doubt the subsequent releases will open up new and exciting sciences, in many of the fields covered by the whole of the IAU!

2.2 Inter-Division A-F Commission Celestial Mechanics and Dynamical Astronomy

Alessandra Celletti
Department of Mathematics
University of Rome Tor Vergata
President of Commission A4

Celestial Mechanics and Dynamical Astronomy refers to the study of the dynamics of N-body systems under gravitational interaction. The objects of study can be natural bodies of the Solar System (planets, satellites, asteroids, etc.), artificial satellites, extra-solar planetary systems, star clusters, or galaxies. In the last decades, this discipline was reinvigorated by the discoveries concerning extrasolar planets, Kuiper Belt Objects, Near-Earth Objects, space debris and low-energy interplanetary trajectories. At the same time, the advent of a large amount of observational data, combined with increasing computational capabilities, has drastically changed the way the dynamics of celestial bodies is currently investigated.

The main goal of the IAU Commission A4 Celestial Mechanics and Dynamical Astronomy is to support research and educational activities. Research in this field involves the accurate modelling of the physical problems and a thorough investigation of their mathematical, physical and computational aspects. The main objects of study are N-body systems, ring models, tidal effects, general relativistic effects, galactic dynamics, and non-gravitational forces. The tools to investigate such systems range from perturbation theory to dynamical systems methods, chaos detection, data analysis, and numerical studies.

Commission A4 promotes the dissemination of Celestial Mechanics and Dynamical Astronomy through different activities that include scientific conferences, workshops, schools, the CELMEC meetings held every 4 years since 1993 (commonly recognised as a reference point for researchers in the field), and special issues in peer-reviewed international journals. The Commission is also in charge of periodically sponsoring and/or co-sponsoring the organisation of IAU symposia. A ResearchGate project has been established to ensure an efficient information system to facilitate collaboration amongst the researchers in the field. Commission A4 maintains a fruitful cooperation with other Commissions within the IAU, and also with diverse fields of science such as applied mathematics, mathematical physics, geophysics, and space sciences, whose research is often applicable to astronomical problems.

2.3
Division D – Supernova Working Group

Avishay Gal-Yam
Weizmann Institute of Science, Israel
Chair of the Working Group

The goals of the Supernova Working Group (SN WG) were:

1. to set up an automated hub to receive reports regarding the discovery of new transients, validate new discoveries, assign unique identifiers to new events, receive classification reports, and rapidly distribute these to the community;
2. to consider the system of names for SN types;
3. to promote public databases making observations accessible to the community.

Here I will focus on the work done towards goal 1 above. Under SN WG oversight, a new IAU instrument was built and deployed since 1 January 2016, called the Transient Name Server (TNS[1]). The TNS currently receives around 3000 transient discoveries each month, from automated wide-field surveys, individual astronomers, and amateur SN hunters. Each new discovery report is compared to previously reported events; new events automatically receive a new unique name, and a discovery report is distributed to registered users. Reports regarding already known events are aggregated and allow cross-verification among surveys. Users can also submit classification reports identifying certain transients as supernovae. Currently most reports arrive from automated surveys, and some of the users receiving the alerts are also machines, but users (such as amateurs) can interact with the system manually. The system also handles "brokers" — automated systems looking for transients in data generated by large surveys — currently from the Zwicky Transient Facility (ZTF), and in the future from the Legacy Survey of Space and Time (LSST). The TNS system includes an astronomical notifications system (Astronotes[2]) to share detailed information about transients, surveys, and relevant tools. All TNS reports are indexed and citable via the NASA ADS system. The TNS system provides a useful solution for communities of astronomers studying various aspects of time-domain astronomy.

Notes

[1] http://wis-tns.weizmann.ac.il/)

[2] https://wis-tns.weizmann.ac.il/astronotes)

3 News

3.1 L'Astronomie Afrique, the first astronomy web magazine in Africa

Prof. Sylvain Bouley[1]
Editor-in-chief
of L'Astronomie Afrique,
Professor in
Planetary Sciences,
Paris Saclay University

Figure 2: Logo of Afrique l'Astronomie

The French Astronomical Society (SAF) is pleased to announce the launch of the first online magazine dedicated to astronomy and space and intended for sky lovers in French-speaking Africa. The "number 0" issue was published on 13 October 2020 on the website lastronomieafrique.com and is dedicated to the planet Mars, since autumn promises to be a good time to observe the Red Planet.

L'Astronomie Afrique, a web magazine, quarterly, free and accessible to all, will be produced with the SAF's know-how acquired over more than a century of publishing their monthly magazine L'Astronomie, but also thanks to the collaboration of many African and French-speaking astronomers within the framework of the Africa Initiative for Planetary and Space Sciences (AFIPSS), the Uranoscope of France, the Senegalese Association for the Promotion of Astronomy (ASPA), the African Astronomical Society (AfAS) and the French Society of Astronomy and Astrophysics (SF2A). Issue 0 offers its readers a dossier on Mars and the latest African and international astronomical news. Readers will discover the first Ghanaian satellite, the history of the Oukaimeden Observatory in Morocco, the activities of the ASPA and a video portrait of Marie Korsaga, the first female astrophysicist from West Africa. L'Astronomie Afrique will also give tips on observing, planetary ephemerides and major events to be observed from October until December 2020.

Sponsor of L'Astronomie Afrique, Hubert Reeves says: "L'Astronomie Afrique is a great opportunity to promote astronomical activity in the African community and to enable young people to find careers in this field that we love so much."
This magazine is a contribution to the new dynamic around astronomy on the African continent and we hope that it will delight all the sky enthusiasts with the passion we all share.

Notes

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3.2

Membership in the IAU and what the Membership Committee does

David Soderblom[1]
Space Telescope Science Institute, Baltimore, Maryland USA,
Chair of IAU Membership Committee

All of the sciences have formed international unions to foster interactions among scientists across borders and to coordinate critical work on things such as units and standards. The IAU is distinct among the world's scientific unions in at least two ways. First, it is the oldest (along with another one formed at the same time), having been established in 1919. Second, you and I can be Individual Members (IMs) of the IAU, and that is not true for most sciences, where a scientist is a member of their national association and then may participate in the international body's governance as a delegate.

The IAU now has roughly 10 000 IMs from most countries of the world, and it has grown significantly in recent decades as astronomy overall has grown. How do individuals like you become members? And what does the Membership Committee (MC) do?

Traditionally IAU membership was intended for research astronomers who had completed a PhD or equivalent, and one could apply for membership every three years, just before each General Assembly. In the past few years the IAU's Executive Committee has changed the policy so that individuals may apply every year. In addition, the IAU now has a category of Junior Member (JM) that is intended for researchers within six years of their PhDs.

In 2019, the IAU received 582 membership applications. These were nominated by the National Committee for Astronomy in their country of employment and then reviewed by the MC to check that the stated qualifications were met. Of the applicants, 372 were accepted as IMs, 205 as JMs, and five were rejected, either because the applicant's PhD was still in progress or the person did not appear to be working in astronomy or a related field.

Because the IAU has individual memberships, it is possible to examine the composition of the body, particularly with respect to women. The overall percentage of women in the IAU is built into its history, since a person can be a member for 40 years or more. What is more indicative is the fraction of women in the

incoming group, especially among the JMs. The overall fraction of women entering in early 2020 as IMs with degrees from 2010 and later was 34%, and it was 37% for JMs. Several countries have fractions over 40%: Australia, Belgium, Germany, Italy, and the USA. This is an encouraging trend that is supported by the IAU's active efforts to encourage and support women in astronomy.

The funds that enable the operation of the IAU come from its member countries directly, not from individual members. The amount is determined by a "class" of membership that is related to the number of IMs. People have asked if adding new members will mean a higher cost to their host nation, and the answer is no, the effect is too small. Finally, a few comments:

- If you work in a country that is not a member of the IAU, you can still become a member yourself by applying through one of the scientific divisions. Contact the Division President most appropriate to you.
- If you are already a member, please inform others you know who may not be so that they can apply. The deadline is 15 December, every year.
- There is also a class called Associates intended to help carry out the goals of a Division, Commission, or Working Group, and their invitation expires (and can be renewed) after 3 years.
- We welcome comments and suggestions on the application form and process.
- The IAU depends on the IMs to do the work of the Divisions, Commissions, Working Groups, and Committees. If you would like to help, contact the president or chair of the appropriate body.

More information on all these topics can be found on the IAU's web pages at https://www.iau.org/administration/executive_bodies/membership_committee/. In closing I want to acknowledge the current members of the MC and to thank them for their work.

Notes

[1] drs@stsci.edu

3.3
OAO & OAD reviews

Maria Teresa Lago
General Secretary

2020 was the year for reviewing the performance of two IAU Offices — the Office for As-tronomy Outreach (OAO) and the Office of Astronomy for Development (OAD).

OAO
The agreement between the IAU and the National Astronomical Observatory of Japan (NAOJ) provides for an independent review of the OAO in 2020, to be jointly organised by the IAU and the NAOJ.

The Terms of Reference (ToR) for the review were agreed by the IAU and NAOJ, along with the composition of the review panel: Oddbjørn Engvold (Chair, former General Secretary of the IAU, Norway), Elaine Sadler (University of Sydney, Australia) and Hiramatsu Masaaki (NAOJ, Japan).

The purpose of this review is to assess the performance of the OAO against the objectives defined in the Agreement, over the three-year period beginning in April 2017.

The panel used relevant documents identified in the ToR, including the self-assessment report prepared by the OAO International Outreach Coordinator, concise information on the financial support received by the OAO, as well as information by the various OAO stakeholders.

The site visit and the interviews all had to be done virtually, owing to the current restrictions resulting from the pandemic situation. The agreed deadline for completing the review was 9 November 2020.

OAD
The agreement between the IAU and the National Research Foundation of South Africa (NRF) provides for an independent review in 2020 to assess the performance of OAD, to be agreed jointly by the two partners. Preparatory work between the IAU and NRF also started in February 2020, but the ToR for the review are not yet completed because of delays in communication.

4 Scientific Meetings

4.1 The Second Shaw-IAU Workshop on Astronomy for Education

Markus Poessel
Director
Office of Astronomy for Education

Carolyn Liefke
Deputy Director
Office of Astronomy for Education

From 6 to 9 October, a total of 346 participants took part in the Second Shaw-IAU Workshop on Astronomy for Education, which was organised by the IAU Office of Astronomy for Education (OAE). The workshop was a fully virtual event, part of an annual series that is made possible through the generous support of the Shaw Prize Foundation. This year's participants represented 82 countries, and more than 80% of the world's population.

The series of Shaw-IAU Workshops is linked to the IAU's increased commitment to the role of astronomy in supporting education in primary and secondary schools. The first workshop, in Paris in late 2019, saw the foundation of the IAU Office of Astronomy for Education. The main aim of this second workshop was to create connections between the National Astronomy Education Coordinators (NAECs) who act as liaison between the OAE and the astronomy education communities in their countries, and also to bring the NAECs into contact with education stakeholders within the IAU and beyond.

In five separate sessions, most of them repeated with a different starting time in order to accommodate participants from different time zones, the workshop explored the role of astronomy education in the IAU, the issue of equity, diversity and inclusion in astronomy education, particularly important resources, the challenges of low-tech environments and innovative solutions, and astronomy education around the world. Sessions consisted of pre-recorded talks, which participants would discuss live with the speakers in the conference chat, plus discussion panels. Talks and live discussions were subtitled for increased inclusivity.

In addition to the lively text-based discussion in the event software's different chat rooms, there were networking sessions, where an algorithm would randomly assign pairs of participants for a 3-minute one-to-one video conversation.

The opening event of the workshop doubled as the official festive opening of the OAE itself, with messages of welcome from IAU President Ewine van Dishoeck, Chair of the

Carl Zeiss Foundation and Minister for Science, Research and the Arts of the German State of Baden-Württemberg Theresia Bauer, Managing director of the Klaus Tschira Foundation Beate Spiegel, Chairman of the Shaw Prize Council and Vice Chair of the Shaw Prize Foundation's Board of Adjudicators Kenneth Young, and IAU General Secretary Teresa Lago. While the Shaw Prize Foundation specifically funds the workshop series, the Carl Zeiss Foundation and the Klaus Tschira Foundation provide significant funding to OAE operations.

Keynote speaker at the opening was Svein Sjøberg, professor emeritus in science education at Oslo University, Norway. Sjøberg spoke about his research on high student interest in science with the Relevance Of Science Education (ROSE) study — and about the particularly high interest students show in astronomical questions, most notably the search for life in the cosmos. That talk sparked a lively discussion, and motivated a number of NAECs to make plans for how the OAE could organise similar international studies using the NAEC network.

As both the intense discussions during the conference and specific participant feedback afterwards showed, the workshop succeeded in bringing its international participants into contact with each other, and in strengthening the connections within the OAE's new network of National Astronomy Education Coordinators. Last but not least, this was due to the virtual nature of the workshop, which allowed a large number of participants from all over the world to attend.

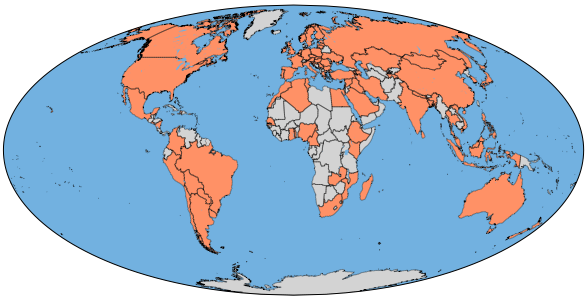

Figure 3: Countries represented (virtually) at the Second Shaw-IAU Workshop. Credit: Niall Deacon / OAE

5 IAU Offices

5.1 Database Manager Collaborations

Madeleine Smith-Spanier
IAU Paris Office

Introduction
I've been working as the IAU Database Manager for the past 7 years. Primarily I work on maintaining the database and facilitating communications for the Union's nearly 12 000 active members. It's a privilege to work together with astronomers and science communicators around the world to make this unique organisation run efficiently and effectively as it embarks upon the second century of its existence. The IAU Office itself is quite small (2 full time employees) and our work would not be possible without the collaboration of our colleagues. I'd like to briefly discuss these collaborations between my work and our colleagues around the globe.

Collaborations with scientific bodies and members
When it comes to membership, we consider it a priority to keep the database updated as quickly and accurately as possible. I work on updating the various affiliations of members of the Divisions, Commissions and Working Groups. We've now created internal webpages for the Divisions and Commissions within the IAU web structure, as well as several EC Working Group pages, and we are in the process of integrating their content so that the historical data will be preserved instead of losing those records and much of the work of these bodies at the end of each triennium.

In order to keep our membership lists and affiliations updated, I work closely with the National Members and National Committees for Astronomy (NCAs) from our 82 Member countries. They are integral in keeping us informed, especially in the period leading up to the General Assemblies when the majority of elections take place, as well as annually during the process of proposing and reviewing applications for members to join the Union.

Managing the membership applications process has evolved in 2018 from a triennial process to an annual one, requiring more regular collaboration between me, the ESO team, the Membership Committee reviewing the applications and the National Members and NCAs.

I work on generating statistics and reports which we can use to study the growth of the IAU, the demographic and gender balance history and trends to push towards a more inclusive environment within the IAU. It's important for me to honour the historical data of the database while trying to improve upon it and using it as a tool to move the IAU forward. There is still a need for improvement. For example, we know there are many deceased members whose deaths have not been reported to us. There is also a need for more historical data. I hope one day to retrieve the data on all past NCAs and Working Groups to include in the database and present on the webpages in a dynamic format.

ESO Collaboration

None of our database and website structure would be possible without the hardworking colleagues we have at ESO. Our Press Officer has decades of experience in science communication; he is in charge of our press releases, announcements and public responses to sensitive topics (jointly with the Officers and the OAO) and I collaborate with him frequently. We also have a team of ESO colleagues who assist me with updating certain content on the webpages, primarily with adding new features. We work on back-end improvements to the membership database so it functions in a more intuitive way. We work together to bring new decisions taken by the Executive Committee (EC) to life on a practical level. For example, the decision to remove inactive members from the IAU lists after 3 years is a significant change structurally and required a lot of work on our part to implement. The upcoming Commission reform will also imply a significant amount of work dealing with the various new/ending/continuing Commissions with their various Organising Committees and membership affiliations to be restructured.

Some things we have accomplished over the past few years include the completion of comprehensive lists of all of the past Division Steering Committees and Commission Organising Commmitees going back to the beginning of the Union as well as the governing committees of the Union. In tandem with the OAO, I've also worked on our membership statistics theme

page which provides useful information to the public, historians and our members. Over the past 3 years we've added also a deceased members page linked to the database which we're working on updating although it is by no means complete at this stage. This serves as a useful resource on the history of the IAU, as do the previous pages.

General Secretary support and IAU Office collaborations
I work closely with my colleague the Head of Administration in the Paris Office on the administration of the IAU and organising our annual Officers Meeting and EC meetings and of course preparations for the triennial GAs.

In terms of General Secretary support, this ranges from mailings sent out to the members, working on announcements in tandem with the Press office and their team, web updates, implementing the IAU Rules, assisting with content for the Catalyst and support with the Cambridge proceedings publications administration.

Final thoughts
I think of myself as a coordinator in many senses. My role often involves coordinating between the various scientific bodies, the membership and the IAU offices, creating a practical way to implement the decisions taken by the EC and integrate them into the database structure while following the Rules of the Union.

My role has evolved over the years and it has been an opportunity to grow and evolve along with the Union as it strives to cover more ground and become a more inclusive and dynamic environment, blending the experience and new ideas of established and early-career astronomers into this exciting field.

5.2

How the astronomy community is responding to the COVID-19 pandemic

Ramasamy Venugopal
OAD Operations Manager

Marie Korsaga
OAD Fellow

At the Office of Astronomy for Development (OAD), we look for ways in which astronomy can be applied to pursue sustainable development. When the COVID-19 pandemic struck, we considered the role of astronomy in this global crisis, specifically what the OAD could do and also how other astronomy groups were responding.

Given the magnitude of the pandemic and the varied local effects, we turned to our global community. We launched an Extraordinary Call for Proposals to help mitigate some of the effects of the pandemic. A total of €40 000 was granted to 43 projects targeting 45 countries. These projects include initiatives to develop and distribute educational materials in Mongolia, Canada, Chile and Ethiopia to reach populations with little or no internet access, by embedding astronomy content in their materials to take advantage of the inspiring potential of astronomy. Other projects, in Italy, Greece, Mexico and Nigeria, are combining art and astronomy to help lift people's spirits. There are also projects applying skills found in astronomy, such as data analytics and programming, to develop solutions to some of the challenges created by COVID-19.

OAD Fellow Marie Korsaga was appointed to investigate how the astronomy community may be contributing to the alleviation of the COVID-19 pandemic and its effects. Her study shows that astronomers can move from applying skills developed studying stars and exploring the Universe to applying those skills to address issues related to the pandemic. For example, astronomers are allocating their computing resources to run simulations to help understand the structure of the virus, are involved in assisting healthcare work (such as designing ventilators in South Africa, the USA, Italy, Canada and Thailand) and are engaging children via online astronomy education to help them learn while stuck at home.

More information on these and other initiatives can be found on the dedicated COVID-19 page on the OAD website: www.astro4dev.org/covid-19

Figure 4: The project 'Distribution of PPEs around the Ghana Radio Astronomy Observatory', one of those funded under the OAD Extraordinary Call for Proposals, has mobilised astronomers at GRAO to provide the neighbouring community with masks and sanitisers. Credits: GRAO/Ghana

5.3 The IAU Office for Astronomy Outreach: 2020 in Review

Lina Canas
International Outreach Coordinator

Izumi Hansen
Assistant Outreach Coordinator

Figure 5: Outreach activities carried in Palestine and Benin. Credit: a) Dawoud Tarawa, NOC Palestine and b) Pide Ahanhanzo, NOC Benin.

In this time of confinement, as the world still fights to contain the spread of COVID-19, people from all backgrounds and levels of experience in public engagement have organised astronomy events to stay connected with their communities. Individuals have streamed their night sky through a telescope; astronomers have held virtual meetups; educators have shared their DIY activities for children and parents learning at home; planetariums have broadcast live remote shows; and research organisations have created online challenges. We've seen numerous creative and inspiring activities happening all around the world.

With the pandemic strongly disrupting our daily lives and the lives of the members of our networks of outreach practitioners, we adapted our 2020 plans to the new normal to better serve our communities. We focused on emphasising virtual engagement: sharing online activities and resources, establishing the Astronomy@Home Awards to recognise inspiring activities, fast-forwarding our Meet the IAU Astronomers! programme to bring professional astronomers to students and their families, and modifying our Telescopes for All, in partnership with Stars Shine for Everyone and Universe Awareness, to bring telescopes to underserved communities.

In 2021, we commit to continuing our work of identifying the needs of our communities and providing solutions that can mitigate the negative impact of the pandemic. We will continue to build bridges between amateur and professional astronomers and carry the legacy of the IAU100 with initiatives such as 100 Hours of Astronomy, Dark Skies for All, and Women and Girls in Astronomy. Most importantly, we plan to engage our ever-expanding group of National Outreach Coordinators (NOCs) in these programmes and further the IAU mission through international cooperation.

5.4
The ISYA lecturers

Itziar Aretxaga
INAOE, Mexico
ISYA Director

David Mota
University of Oslo, Norway
ISYA Deputy Director

The International School for Young Astronomers (ISYA) is a three-week-long intensive graduate school that targets countries where astronomy is not fully developed, as well as isolated graduate students around the globe. Typically, invited lecturers to the schools are researchers in faculty positions with international career paths, familiar with the region. So far 401 lecturers, including assistant instructors, have served in the ISYAs over its 52-year lifespan. These are mainly IAU members from the international community and the host country of the school.

We have extracted the names of lecturers from the school reports in the ISYA web page[1]. The country assigned to lecturers is that of the current sovereign state of their home institutes, not necessarily their country of origin. For the analysis, people from the former republics of Czechoslovakia, Yugoslavia and the USSR are assigned to countries according to the current sovereign states of their institutes at the time they attended the school.

Each person is counted only once, even if they attended several ISYAs: 18% of lecturers participated in more than one ISYA, and a third of these lecturers were ISYA alumni from previous schools.

Notes

[1] https://www.iau.org/education/school_for_young_astronomers/list/
[2] https://www.naturalearthdata.com/

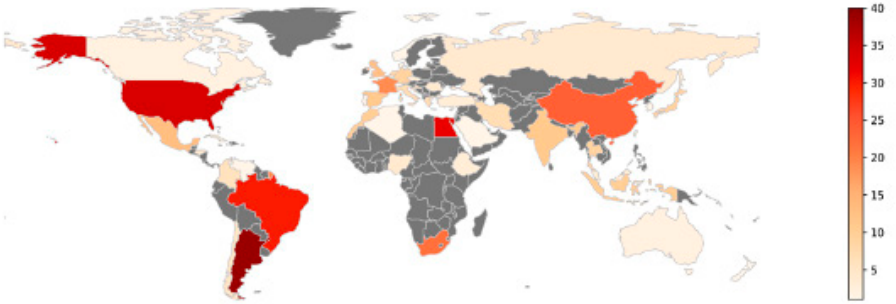

Figure 6: Distribution of the 44 countries of the 401 lecturers of 42 ISYA schools. Boundaries are as defined by sovereign states in Natural Earth[2]. Source: OYA.

5.5 The Office of Astronomy for Education (OAE)

Markus Pössel
OAE Director

Carolin Liefke
OAE Deputy Director

The Office of Astronomy for Education (OAE), founded in December 2019 and hosted at Haus der Astronomie / Max Planck Institute for Astronomy in Heidelberg, Germany, has been busy ramping up its operations. The OAE mission is to leverage astronomy to support primary and secondary school teaching. To this end, the OAE is creating infrastructure for publishing and for finding educational resources, and supporting the professionalisation of both astronomy educators and astronomers in the areas of teaching and learning.

The OAE team consists of Director (Pössel) and Deputy Director (Liefke), three OAE coordinators (Markus Nielbock, Niall Deacon, Juan Carlos Muñoz), an organisational assistant (Gwen Sanderson), and a consultant for the primary school sector (Natalie Fischer). While the OAE is based in the galaxy-shaped building of Haus der Astronomie ("House of Astronomy") in Heidelberg, Germany, the team is currently working from home, with frequent interactions online.

Over the past few months, one main focus of the OAE has been on growing our network of National Astronomy Education Coordinator (NAEC) Teams. The NAEC Teams are the liaisons between the OAE and the different countries' astronomy education communities — bringing their countries' particular needs and requirements into the discussion on the one hand, and helping to disseminate OAE resources in their communities on the other. At the time of writing (mid-October 2020), the number of confirmed NAECs has grown to 268, representing 78 countries. We have met roughly half of those NAECs personally via Zoom, and have consolidated the network this October at the Second Shaw-IAU-Workshop on Astronomy for Education, more about which is on p. 14.

In addition, we are working on creating the first eight OAE Centres and OAE Nodes. An institution that is willing to commit resources, in the form of personnel and funds, to furthering the mission of the OAE can become part of the IAU's efforts as an OAE Centre or, on a smaller scale, as an OAE Node.

Regarding the infrastructure for astronomy education, the OAE now supports the astroEDU portal of peer reviewed educational activities, and we are in negotiations about the best way the OAE can support the "Big Ideas in Astronomy" project, which centres around a consensus notion of what it means to be astronomy-literate. We have begun work on the multi-lingual astronomy glossary that is meant to help with the translation work needed to make astronomy education resources in local languages — a joint project with the Office for Astronomy Outreach. Various talks at the Second Shaw-IAU Workshop, notably on equity, inclusion and diversity, and on astronomy in low-tech environments, laid the groundwork for future OAE Reviews — compact resources that will bring astronomers and astronomy educators up to speed on specific important topics in astronomy education. With draft chapters for more than 40 countries, we are also well on our way when it comes to the OAE Review "Astronomy education around the world."

All in all, as we near the end of the office's first year, the OAE is in transition: from building our organisation to functioning as a fully-operational part of the IAU family of offices.

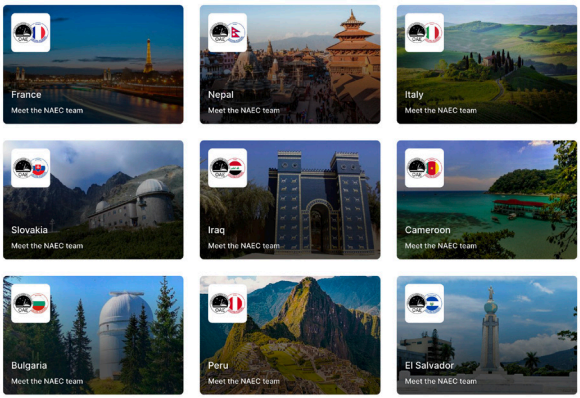

Figure 7: Some of OAE National Astronomy Education Contact Teams.

5 IAU Offices

5.6 The IAU Press Office 2020

Lars Lindberg Christensen
IAU Press Officer

The IAU Press Office has over the past year continued to work closely with the IAU General Secretary and the IAU Secretariat on IAU's external communications.

Over the past decade the IAU has gradually increased its communication, as illustrated by the number of published news items (see Figure 1). 2018 and 2019 were particularly active years for the IAU's external communications. 2018 was a General Assembly year and 2019 saw the big IAU100 celebrations. Both years had an above-average number of press releases and Announcements (web releases).

The trend has been towards a more active production of news, showing the IAU's dedication to communicating publicly. In addition to news, the IAU produces social media posts and answers requests from the media and the public.

Together with the IAU Commission B7 Protection of Existing and Potential Observatory Sites (Inter-Division B–C Commission) and the IAU Executive Committee Working Group Dark and Quiet Sky Protection, a new IAU Theme about the important topic of satellite constellations[1] was written.

The main distribution channel remains the public IAU e-mail Newsletter[2] which is issued for every press release and aggregates all news written up to that point.

Notes

[1] https://www.iau.org/public/themes/satellite-constellations/
[2] https://www.iau.org/publications/e-newsletters/

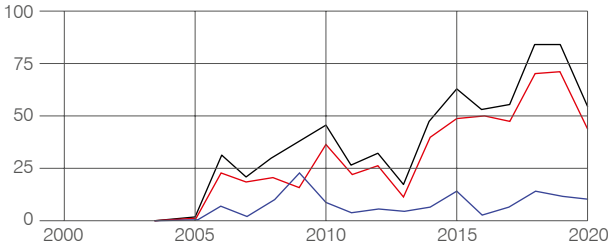

Figure 8: The number of main IAU news items over time. The number for 2020 is an estimate extrapolated from the first 2/3 of the year.
IAU Announcements
IAU Press Releases
IAU News Total

6.1 Astronomy in Brazil

Beatriz Barbury
University of São Paulo

Brazil joined the IAU in 1962, and students started moving abroad for a PhD in astronomy around the same time. Essentially only traditional institutions existed before that. Thanks to excellent fellowship programmes from CNPq and CAPES agencies since the 60s, a significant number of well qualified astronomers were trained (abroad and in the country). The community has now 300 astronomers employed as staff members among 87 institutions with at least one astronomer, and around 300 graduate students.

Presently the Brazilian astronomical community has access to limited fractions of a few telescopes: 33% at the 4m Southern Astrophysical Research (SOAR) Telescope, 6.5% at both 8m Gemini telescopes (Chile and Hawai'i). We have a 1.6m telescope in the Laboratório Nacional de Astrofísica (LNA) of the Ministry of Science, Technology and Innovation (MCTI). In the late 2020s, we should have access to 4% of the 22m Giant Magellan Telescope (GMT) (for São Paulo State astronomers). Despite approval by the Congress, and the Decree establishing membership in 2015, the Government failed to ratify the agreement for accession to the European Southern Observatory (ESO), owing to the economic crisis since then.

Institutions run by the Federal Government, in particular the LNA/MCTI, coordinate and support the observational facilities. The National Observatory ON/MCTI, besides funding participation in several surveys, has been developing the Laboratory LINEA providing infrastructure for access to big data such as the forthcoming Legacy Survey of Space and Time (LSST). Capabilities in instrumentation have been greatly improved, as demonstrated for example by the building of the SOAR Telescope EchelLE Spectrograph (STELES) and Echarpe for the 1.6m LNA telescopes. Members of the community are involved in several other instruments, e.g., the GMT Consortium Large Earth Finder (G-CLEF) and the GMT Multi-object Astronomical and Cosmological Spectrograph (GMACS) for the GMT, the Cassegrain U-Band Efficient Spectrograph (CUBES) for the Very Large Telescope (VLT), the Near InfraRed Planet Searcher (NIRPS) for the New

6 Science Focus

Technology Telescope (NTT), the Prime Focus Spectrograph (PFS) for the Subaru Telescope, and the SPectropolarimètre InfraRouge (SPIRou) for the Canada France Hawaii Telescope (CFHT). There is also participation in the PLAnetary Transits and Oscillations of stars (PLATO) project. Most of these participations rely on the São Paulo State agency FAPESP as a main source of funds. Federal funds for science were also important in the recent past, but these have been reduced in the past years.

In conclusion, Brazil has a strong and competitive astronomical community developing science at an international level. The engagement of our community in scientific and instrumentational projects with foreign partners will hopefully enable us to keep up the pace in the years to come.

Y. Beletsky (LCO)/ESO

6.2

The General Assembly in the post-COVID-19 era: adjusting to the new normal

Hyesung Kang
Chair of the
IAUGA2021 LOC

During the unprecedented COVID19 pandemic, the Local Organising Committee (LOC) has been preparing for the XXXI General Assembly (GA) of the IAU (IAUGA2021), which was originally planned to be held in August 2021 in Busan, South Korea. Until October 2020, the LOC, working closely with the IAU officers, was exploring options for a feasible hybrid format, where both in-person and virtual participations could be arranged. With the worsening global pandemic situation, however, the majority of the Executive Committee, Division Presidents and organisers of symposia and focus meetings have expressed a number of concerns about holding a hybrid GA in 2021. Hence, at the joint meeting between the IAU officers and the LOC on 17 November, it was decided that the XXXI GA will be postponed to 1–12 August 2022, though these dates remain tentative. We plan to open the registration and abstract submission at the official website in the later part of the year 2021.

Last May the IAU Executive Committee announced the list of rigorous yet exciting scientific programmes for the IAUGA2021, including 7 symposia, 11 focus meetings, 9 Division meetings, and IAU institutional meetings. Please visit the IAUGA2021 website for the full list: www.iauga2021.org. We hope all the symposia and meetings will be carried over to the new schedule in 2022.

IAUGA2021 will be jointly hosted by the Korean Astronomical Society (KAS) and the Korea Astronomy and Space Science Institute (KASI) with enthusiastic support from the Ministry of Science and ICT and the city of Busan. The KAS (President, Prof. Dongsu Ryu) was founded in 1965 and has grown as a leading organization with about 1,000 members. Its biannual meetings in spring and autumn are regularly attended by over 300 members. The Society joined the IAU in 1973 and now holds a category III membership with 172 individual members. The KASI (President, Prof. Hyung-Mok Lee) was established in 1974 as the national research institute for astronomy. It has lead astronomical research activities, established and operated astronomical observational facilities, and laid an

important foundation for the advancement of the basic science in Korea.

The host city of Busan is located on the southeastern coast of the Korean peninsula, about 2.5 hours from Seoul on the high-speed KTX train. The city offers modern yet reasonably priced accommodations, restaurants, and stores nearby the famous Haeundae Beach. There are abundant tourist attractions including beaches, parks, walking trails along the seaside, and historical Buddhist temples. The venue, BEXCO, is a premier convention facility with ample meeting rooms and exhibition spaces. The LOC plans to organise exciting social events with Korean food, art, and traditional performances to introduce Korean culture to in-person attendees, while complying with the local health regulations appropriate to the pandemic response.

In accordance with the IAU's mission, the LOC recognises the importance of continuing international cooperation among

Category	Requirements for KAS grant application	Support from LOC
Students	1. GA registration 2. KAS grant application with an official certificate of student enrollment and an endorsement letter from an IAU individual member	1. complimentary registration 2. nominal travel support for in-person attendees *Some volunteer services will be requested by LOC.*
Early-career astronomers	1. GA registration and abstract submission 2. KAS grant application with IAU junior membership or an endorsement letter from an IAU individual member	
Retired IAU members	1. GA registration 2. KAS grant application with IAU individual membership and a document showing retired status	

its members from all around the world. Under the theme of Astronomy for All, we have established a special KAS grant to encourage more young students and early-career astronomers to participate in the Busan GA. The details of the KAS grant application can be found in the table below.

Owing to the persistent pandemic, we may have to adapt to a "new normal" for international meetings, such as wearing face masks, social distancing, and online participation, possibly during 2022 and beyond. However, the LOC sincerely hopes that the IAUGA2022 can be a platform where we can meet our colleagues face-to-face, and share old traditions and new ideas. Let us be resilient and prepare for the Festival of Astronomy in Busan in 2022.

Figure 9: Busan, South Korea, where tradition meets modernity

7 IAU Publications

IAU Symposia

IAUS 357 - White Dwarfs as Probes of Fundamental Physics: Tracers of Planetary, Stellar and Galactic Evolution
Eds. Martin A. Barstow; Scot J. Kleinman; Judith L. Provencal; Lilia Ferrario
Cambridge University Press
15 Oct 2020

IAUS 354 - Solar and Stellar Magnetic Fields: Origins and Manifestations
Copiapo, Chile. 30 June–6 July, 2019.
Eds. Kosovichev, A., Strassmeier, K., Jardine, M.
Cambridge University Press
ISSN 1743-9213
25 Sep 2020

IAUS 353 - Galactic Dynamics in the Era of Large Surveys Shangai, China
Eds. Valluri, M.; Sellwood, J. A.
Cambridge University Press
30 Jun 2019

IAUS 352 - Uncovering Early Galaxy Evolution in the ALMA and JWST Era
3–7 June 2019, Viana do Castelo, Portugal
Eds. da Cunha, E.; Hodge, J.; Afonso, J.; Pentericci, L.; Sobral, D.
Cambridge University Press
9 Jun 2020

IAUS 351 - Star Clusters: From the Milky Way to the Early Universe
27–31 May, 2019. Bologna, Italy.
Eds. Bragaglia, A.; Davies, M.; Sills, A.; Vesperini, E.
Cambridge University Press
25 May 2020

IAUS 350 - Laboratory Astrophysics: From Observations to Interpretation
Eds. Salama, F.; Linnartz, H.
Cambridge University Press
ISSN 1743-9213
14 Oct 2020

IAUS 345 - Origins: From the Protosun to the First Steps of Life
20–23 August, 2018.
Vienna, Austria
Eds. Elmegreen, B.; Tóth, L.V.; Güdel, M.
Cambridge University Press
25 May 2020

IAUS 343 - Why Galaxies Care About AGB Stars: A Continuing Challenge through Cosmic Time
20–23 August, 2018.
Vienna, Austria
Eds. Kerschbaum, F.; Groenewegen, M.; Olofsson, H.
Cambridge University Press
25 May 2020

IAUS 341 - Challenges in Panchromatic Modelling with Next Generation Facilities
12–16 November, 2018. Osaka, Japan.
Eds. Boquien, M.; Lusso, E.; Gruppioni, C.; Tissera, P.
Cambridge University Press
ISSN 1743-9213
22 Jun 2020

IAU Regional Meetings

LARIM 2019: XVI Latin American Regional IAU Meeting
Antofagasta, Chile.
3–9 November 2019
Ed. Patricia B. Tissera
7 Sep 2020

IAU Information Bulletins / Catalyst

IAU Catalyst June 2020
June 2020
IAU Secretariat
2 Jun 2020

IAU Related Publications

IAU 100th Anniversary Celebrations Final Report
Eds. Rivero González, J.; Van Dishoeck, E.; Russo, P.; Canas, L.; Downer, B.
26 May 2020

Annual Division Reports (2019)

Division F Annual Report (2019)
Ed. Tancredi, G.
4 May 2020

7 IAU Publications

Division G Annual Report (2019)
Ed. Soderblom, D.
28 Apr 2020

Division H Annual Report (2019)
Ed. Testi, L.
14 May 2020

Annual Commission Reports (2019)

Commission C1 Annual Report (2019)
Eds. Bretones, P.; Fitzgerald, M.
7 May 2020

Commission H1 Annual Report (2019)
Ed. Minniti, D.
6 May 2020

Commission X2 Annual Report (2019)
Ed. Valsecchi, G.
4 May 2020

Commission F2 Annual Report (2019)
Ed. Lissauer, J.
4 May 2020

Commission J2 Annual Report (2019)
Ed. D'Odorico, V.
30 Apr 2020

Commission H4 Annual Report (2019)
Ed. Karakas, A.
29 Apr 2020

Commission H2 Annual Report (2019)
Ed. Bergin, E.
29 Apr 2020

Commission D1 Annual Report (2019)
Ed. Branchesi, M.
29 Apr 2020

Commission F1 Annual Report (2019)
Ed. Janches, D.
29 Apr 2020

Commission X1 Annual Report (2019)
Eds. Storchi Bergmann, T.; Forman, W.
29 Apr 2020

Commission E1 Annual Report (2019)
Ed. Kosovichev, A.
28 Apr 2020

Commission G2 Annual Report (2019)
Ed. Vink, J.S.
28 Apr 2020

Annual Working Group Reports (2019)

WG Annual Report (2019) - Astronomy Education Resources (AstroEDU)
Ed. Edward Gomez
14 Jul 2020

WG Annual Report (2019) - Time Domain Astronomy
Ed. Seaman, R.L.
20 May 2020

WG Annual Report (2019) - Star Names
Ed. Mamajek, E.
6 May 2020

WG Annual Report (2019) - Junior Members
Eds. Kebe, F.; Drozdovskaya, M.
5 May 2020

WG Annual Report (2019) - Small Bodies Nomenclature (SBN)
Ed. Tichá, J
4 May 2020

WG Annual Report (2019) - Near Earth Objects
Ed. Michel, P.
4 May 2020

WG Annual Report (2019) - Dark and Quiet Sky Protection
Ed. Walker, C.
29 Apr 2020

WG Annual Report (2019) - Technical Working Group
Ed. Burton, M.
29 Apr 2020

WG Annual Report (2019) - Site Protection
Ed. Burton, M.
29 Apr 2020

WG Annual Report (2019) - Achieving Sustainable Development within a Quality Lighting Framework
Eds. Metaxa, M.; Walker, C.
29 Apr 2020

WG Annual Report (2019) - Reference Library of Galaxy Spectral Energy Distributions (RELIGAS)
Eds. Salim, S.; Gruppioni, C.
29 Apr 2020

WG Annual Report (2019) - Meteor Shower Nomenclature
Ed. Jenniskens, P.
29 Apr 2020

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WG Annual Report (2019) - Women in Astronomy
Ed. Norman, D.
29 Apr 2020

WG Annual Report (2019) - Astronomy Education Research & Methods
Ed. Eriksson, E.
29 Apr 2020

WG Annual Report (2019) - Astronomy Competitions for Secondary School Students
Ed. Stachowski, G.
28 Apr 2020

WG Annual Report (2019) - Planetary System Nomenclature
Ed. Schulz, R.
28 Apr 2020

IAU News

We welcome submissions for newsworthy IAU developments to be considered for IAU Press Releases and Announcements. News is defined as any important development in the Union that ought to be communicated to a wider audience beyond the scope of just one of the Scientific Bodies. It is also a means of communication not only about astronomy but also between astronomers.

Notes

[1] IAU Press Releases and Announcements References: https://www.iau.org/news/pressreleases/ https://www.iau.org/news/announcements

[2] IAU Publications: https://www.iau.org/publications/iau/

[3] IAU Newsletters: https://www.iau.org/publications/e-newsletters/

Cooperation with other Unions and Organisations 8

8.1 The International Science Council

Daya Reddy
President

The International Science Council (ISC) was founded in mid-2018, merging the International Council for Science (ICSU) (est. 1931) and the International Social Science Council (ISSC) (est. 1952). The ISC counts among its members academies, science councils and similar bodies from more than 140 countries, as well as over 40 disciplinary international scientific unions covering the range of natural and social sciences.

The ISC is proud to have the IAU as one of its founder members. Indeed, the IAU, in the year of its foundation in 1919, was a founder member also of the International Research Council, the forerunner to ICSU and the ISC.

The vision of the ISC is one of science as a global public good, and its mission is to act as the global voice for science. In this context the ISC mobilises science for policy and public action on issues of global concern, contributes to shaping policies for science that enable scientific rigour, creativity and relevance, and works to safeguard and promote the free and responsible practice of science. There is an emphasis on the promotion of multi-and trans-disciplinary activity and action towards open science: for example, the draft discussion paper on Open Science for the 21st Century, and the establishment of the African Open Science Platform.

The ISC pursues its activities in partnerships with a range of regional and global bodies, and as a co-sponsor of major programmes such as the World Climate Research Programme. Together with the World Federation of Engineering Organizations, the ISC is co-organiser of the UN Major Group for the Scientific and Technological Community.

The Action Plan serves as a basis for active engagement with ISC members, and as a point of departure for dialogue and cooperation with partners and funders who share the Council's objectives. Its scope and goals have been revisited to take account of the impact of the SARS-Cov-2 pandemic, for example on implications for global agendas such as the Sustainable Development Goals and in mapping out pathways for recovery and greater resilience.

8 Cooperation with other Unions and Organisations

The Rethinking Human Development Project is a joint initiative by the United Nations Development Programme and the ISC. The IAU's Office of Astronomy for Development contributed to the global discussion on this project, and will have joined the Global Human Development Relay on World Science Day on 10 November 2020 as a key partner.

The General Assembly is the highest authority of the ISC. The Governing Board is elected at this triennial meeting; among its key functions is that of providing strategic leadership towards realising the vision and mission of the Council.

The free and responsible practice of science is fundamental to human advancement and living sustainably within planetary boundaries. Through its Committee for Freedom and Responsibility in Science, the Council pursues issues pertaining to freedom of movement, association, and communication for scientists, as well as equitable access to resources for research. Furthermore, it advocates for measures to promote responsible conduct in science. The ISC's support for the UNESCO Recommendation on Science and Scientific Researchers is given substance through planned collaboration in this important domain.

The ISC invites you to engage with us through the IAU and our newsletter and social channels.

IAU Timeline: Dates and Deadlines 9

9.1 Important events coming up in the next six months within the IAU

- 15 December hosts several important deadlines, especially as this is the end of the year leading up to the General Assembly.
  - Deadline for submission of full proposals for 2022 Symposia;
  - Deadline for applications for Individual, Junior and National Membership;
  - Deadline for nominations for the Gruber Foundation Cosmology Prize and
  - Deadline for the IAU PhD Prize application submission.
- 16 December: Both the IAU PhD Prize and the Gruber Foundation Cosmology Prize nominations open for 2021.
- 1 February is the deadline for items submitted to go on the OM agenda.
- 15 February marks several important dates:
  - the deadline for the review of Individual and Junior Membership applications by the National Committees for Astronomy (NCAs) or adhering organisations or Division Presidents;
  - the deadline for the submission of Resolutions without financial implications;
  - the deadline for Division Presidents' recommendations of Associates to become IAU Members submitted to the General Secretary.
- 21 February is the date by which submissions of motions to modify the proposed budget or any other matters pertaining to it should reach the General Secretary.
- In March we have the following important dates:
  - 1 March is the deadline for items submitted to go on the EC agenda.
  - The Officers'Meeting 2021 will take place virtually from 2 to 4 March.
  - 15 March is the deadline for the National Members to submit Honorary member candidate applications and for Divisions, Commissions and Working Groups to submit their triennial reports.
  - 31 March is the deadline to receive applications for The Gruber Foundation Fellowship. This is also the deadline for the review of the membership applications by the Membership Committee.

9 IAU Timeline: Dates and Deadlines

- 1 April marks the opening of the call for The Gruber Foundation Fellowship applicants to submit their applications for next year.
- The National Members are notified of the adoption of any proposed modifications to the budget by 15 April. This is also the deadline for the Finance Committee to provide the IAU General Secretary with the annual report on the accounts.
- 1 May marks the announcement of the programme of Symposia as well as the opening of the call for Letters of Intent (LoI) for Symposia 2023.
- 7 May is when the accepted Individual Members and Junior Members are announced.
- 15 May is the date when the announcement is made with the name/s of recipients of The Gruber Foundation Cosmology Prize. 15 May also marks the deadline for several IAU Committee nominations leading up to the GA, including for:
  - the Finance Committee to submit a list of at least 10 Individual Members of the Union who accept to serve on the Committee for the next triennium if elected, including a nominee for Chair;
  - the Membership Committee to submit a list of at least 10 Individual Members of the Union who accept to serve on the Committee for the next triennium if elected, including a nominee for Chair;
  - and receiving potential nominations of members for the Special Nominating Committee (SNC) for the following triennium from Division Presidents and EC Members.
- 21 May is the announcement date for the recipients of the Shaw Prize 2021.
- 15 June is the date when the PhD Prize winners are announced.

This is the reference for upcoming
Administrative Dates and Deadlines:
https://www.iau.org/administration/events/future/list/1/
Upcoming IAU Meetings are listed online at:
https://www.iau.org/science/meetings/future/

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