

Report on the 2018 General Assembly of the International Astronomical Union

The XXX General Assembly (GA) of the International Astronomical Union (IAU) was held in Vienna, Austria from August 20 to 31, 2018. The scientific program included Focus Meetings, Symposia, as well as Division and Commission meetings. In addition, there were three Invited Discourses on scientific topics of broad interest, six one-hour plenary sessions each summarizing one of the Scientific Symposia, and a public talk given by former IAU President Robert Williams from the Space Telescope Science Institute (STScI) in Baltimore, MD. There were two Business Meetings to address a variety of administrative matters for all participants, each of which was preceded by a “Preliminary Business Meeting” for the National Representatives (NR) to review and discuss the agenda for the subsequent Business Meeting. Approximately 3000 individuals, including nearly 100 members of the press, representing 89 countries participated in at least some of the scientific, education, or administrative sessions, though most participants did not attend for the full two-week duration.

The United States was represented by K. I. Kellermann (USNC-IAU Chair), R. Blandford (USNC-IAU Vice Chair), and D. Soderblom (USNC-IAU Membership Committee Chair). When Blandford was unable to be present, M. Haynes acted in his place.

General

The U.S. supports IAU programs in three broad areas:

- a) astronomical community actions (involving union scientific organization, procedures, voting, conferences, member communications, and archiving)
- b) global actions (education in underdeveloped countries, outreach to next generation scientists, interactions with UNESCO on heritage sites)
- c) public actions (e.g. worldwide process for naming certain astronomical objects, coordination with UNESCO on the International Year of Light)

Significant activity occurred during the triennium since the last IAU General Assembly in each of these areas, as reported in detail by General Secretary to the NRs during their meetings and to the GA as a whole during the two administrative sessions.

The Current IAU Strategic Plan was adopted in 2009 and updated in 2012. It exclusively concerned education and public outreach activities. A new extended Strategic Plan covering the period 2020-2030 was approved by the National Members at the 2018 GA and includes:

- a) Stimulation and facilitation of astronomical knowledge sharing among astronomers
- b) Global coordination of ground and space astrophysics
- c) Dark and quiet sky protection
- d) Naming of astronomical objects and setting astronomical standards
- e) Recognition of excellence in astronomy through awarding prizes, including the newly established prizes for recent PhDs
- f) Foster inclusiveness in astronomy
- g) Facilitate the advancement of the next generation of astronomers through the Office for Young Astronomers
- h) Stimulate global development through the use of astronomy through the Office of Astronomy for Development.

USNC member and IAU Vice President (now President-elect) Debra Elmegreen along with President-elect (now President) Ewine van Dishoeck (Netherlands) led the effort to prepare the new Strategic Plan.

The IAU partners with a number of other international bodies including:

- a) UNESCO, via programs such as the International Year of Astronomy and the International Year of Light, as well as efforts towards World Heritage declarations for dark sky and radio quiet zones.
- b) The International Science Council (ISC), as a member scientific union and as co-sponsor of IUCAF.
- c) URSI as a co-sponsor of IUCAF and various inter-union Working Groups.
- d) COSPAR on educational programs and as co-sponsor of IUCAF

Individual, Junior and Honorary Membership in the IAU

In addition to the 89 National Members, the IAU has traditionally included Individual Members who are professional astronomers recommended by the National Members. Previous concerns about the apparent diversity of criteria among the adhering bodies when vetting IAU membership applications have mostly been resolved, largely through the efforts of the USNC along with representation on the IAU Membership Committee by USNC member David Soderblom and the cooperation and support of the IAU General Secretary. Individual Members are elected only once every three years at the time of a GA. For the XXX GA, all applications for Individual and Junior Membership were made using a universal on-line application form and for the most part worked effectively, achieved the desired goals and were reviewed by both the National Members and by the IAU Membership Committee.

Participation in IAU GAs is open to anyone and is not restricted to IAU Members. Traditionally, non-members, especially young scientists not yet eligible for Individual Membership have played an active role in the GAs and Symposia as speakers and organizers. However, to further promote increased participation from young scientists who have not yet met the criteria for Individual Membership, this year, for the first time, the GA approved a new category of Junior Member. Junior Members are expected to have received their PhD or to have equivalent experience, may be elected in any year, and may stay in that category for not more than six years, after which they must either apply for regular membership, or if no longer active in astronomy, will be dropped from the membership role.

At the GA, 888 new Individual Members and 352 Junior Members were admitted to the IAU bringing the total number of IAU Individual Members to more than 13,500. Within the United States, the USNC advertised the opportunity for scientists to apply to become Individual or Junior Members through the American Astronomical Society and via the USNC-IAU web site, <http://sites.nationalacademies.org/PGA/biso/IAU/index.htm>. Based on applications received, 211 scientists were proposed by the USNC and elected as New Individual Members. This is about the same fraction (23%) as the overall U.S. membership in the IAU. Of the 211 new U.S. based Individual Members, 173 (82%) are U.S. citizens, while only 65% were born in the U.S. The remainder come from 31 different countries. The 211 new US based members work in 104 different institutions located in 34 different states. Approximately 40% of the new US based members are female; worldwide it is 31%..

This year the IAU also introduced a new category of Honorary Member to recognize individuals that have substantially contributed to the development of the astronomical research in their country, but who are not professional astronomers and do not qualify as Individual Member. Following nomination by the USNC, Wayne Rosing of the United States was elected by the 2018 GA as one of eight Honorary IAU Members. Rosing was honored for his long-term and sustained efforts to establish, build, and operate the Las Cumbres Observatory (LCO) as a unique resource for astrophysics.

Scientific Matters

The rich and diverse scientific program represented forefront topics in current astronomy and astrophysics. As stated above, the scientific program included 15 Focus Meetings (1-2 days each), six scientific Symposia (4-5 days each) and nine Division Meetings (2 days each). A seventh Symposium, “Under One Sky: The IAU Centenary Symposium” reviewed the achievements of the IAU over the past 100 years since its founding in 1917. The quality of the Invited Discourses and Plenary Talks was impressive and showcased the high rate of discovery and secure understanding in modern astronomy. The global nature of the research programs, featuring collaboration, cooperation and competition, was clearly demonstrated. The Invited Discourses summarized the remarkable recent progress in gravitational radiation, understanding the rich evolution of stars in galaxies and learning how planets form in proto-stellar disks. There was considerable emphasis on the anticipated observational prospects over the next few years.

Session content for the Focus Meetings, Symposia, Division and Commission meetings was assembled from proposals originating in the scientific community with the details of each session put together by individual scientific organizing committees. At the meeting itself, there was the opportunity for press releases of important and potentially influential scientific results. Some participants, noted that compared with earlier GAs, due to the pressure of the Focus Meetings and Symposia, there was insufficient time for meetings of individual Commissions.

Two scientific resolutions concerning the Geocentric and International Terrestrial Reference Systems and Frames, and a resolution on the preservation, digitization and scientific exploration of historical astronomical data were passed by the GA without discussion. A more controversial resolution to rename the Hubble Law as the “Hubble-Lemaître Law” to describe the expansion of the universe was endorsed by a strong majority vote, but only after intense discussion. Bruce Elmegreen (IBM), Chair of the Resolutions Committee skillfully managed the debate and answered questions. Due to the controversial nature of the resolution, the vote of Members present at the IAU was taken as advisory, and the resolution will be put to the full membership for electronic voting. The GA also approved the renaming of the Division previously called, “Planetary Systems and Bioastronomy” to “Planetary Systems and Astrobiology.”

Administration and Governance

At the GA, the IAU modified the definition of the “Interim and Prospective” temporary category of National Member to waive the previous 9-year time limit on Interim Members and to replace the previous category of Prospective Member with its 6-year time limit, with the category of “Observer” which has no time limit. Recognizing the small number of astronomers in these countries, Interim Members pay only ½ unit dues, while Observers do not pay any dues and do

not have any voting rights. The IAU admitted six new National Members: Algeria, Cyprus, Ghana, Jordan, Slovenia, and the United Arab Emirates. Madagascar, Morocco, Mozambique, and Syria were admitted as Observers, bringing the total number of adhering countries to 89. Two separate applications from Ecuador were rejected as the proposers failed to merge them into a single proposal.

The New Officers of the IAU for the next triennium are:

President: Ewine F. van Dishoeck (The Netherlands)

General Secretary: Maria Teresa V.T. Lago (Portugal)

President-elect: Debra M. Elmegreen (US – Vassar College)

Assistant General Secretary: Ian Robson (UK)

As has been the IAU tradition, the new President previously served on the Executive Committee as President-elect; the new President-elect was previously a Vice President. The New General Secretary previously served as the Assistant General Secretary.

Of the Nine Scientific Divisions, three of the new Presidents are from the United States. They are:

Susana Deustua (STScI): Division C, Education, Outreach, and Heritage

Sarah Gibson (High Altitude Observatory, Boulder): Division E: Sun and Heliosphere

David Soderblom (STScI): Division G, Stars and Stellar Physics

In addition, a number of the new Commission Presidents also come from the United States. USNC member David Soderblom was selected to Chair the IAU Membership Committee, while Lee Anne Wilson (Iowa State Univ.) was appointed for a second term on the Finance Committee.

The new officers were nominated by a Special Nominating Committee that had been appointed by the National Members in 2015 based on nominations from the Division Presidents. Division and Commission Presidents were elected by the respective membership based on nominations received (including self-nominations).

Harvey Liszt (US-NRAO) continues as Chair of the Inter-Union Commission on the Allocation of Frequencies, which is a joint body of the IAU, URSI, and COSPAR. Upon recommendation by former IAU President Robert Williams and the USNC, Stephen Pompea, Head of the NOAO EPO program will serve as the National Outreach Coordinator for the United States. His role will be to work with the IAU's Office on Astronomy Outreach (OAO) on public outreach and engagement activities.

Financial Matters

The dues paid by each adhering body to the IAU is determined by negotiation between the NMs and the GS but is in rough proportion to the level of the astronomical enterprise in each country. The financial support from the U.S. is critical to the IAU budget and thus the overall operations of the organization. U.S. based Individual Members are a significant fraction of the IAU membership and, as the largest contributor, the U.S. pays a comparable fraction of the dues which are funded by the NSF. The U.S. is also valued for providing support beyond its dues for continuing GA activities, such as the USNC reception, the women's and young astronomer's lunches. These U.S. contributions come from the USNC/IAU itself. The U.S. also supports the

Union through the NSF/AAS travel grants, which have the effect of U.S. self-sufficiency with respect to the pool of general IAU travel grants.

As agreed at the 2015 General Assembly, for the past and next triennium, the unit dues are scheduled to increase by 2% per year. Most of the budgetary issues raised by the US and other National Members at the previous IAU GA appears to have been addressed although there remains some concern about viability of the budget relative to the number and diversity of exciting and worthwhile programs being carried out by the union. The wisdom of concluding a new contract with Cambridge University Press was questioned. Although the GS has responded to the concern previously expressed by many National Members that Symposium participants be required to purchase copies of the proceedings, isn't clear if the new contract with CUP will bring in the anticipated level of royalty income.

In his projected budget plan, the GS proposed to “unilaterally” reduce the contribution of the IAU to the new International Science Council (ISC) by a factor of two, but withdrew this initiative after strong objection from the US delegation, pending further negotiation between the IAU and the ISC.

The GA also modified its Statute's article on dissolution of the Union to demonstrate that the IAU is the equivalent of a U.S. public charity which may qualify the IAU for certain funding.

Other Matters

As approved at the 2015 IAU GA, the next IAU GA will be held in Busan, Republic of Korea during July or August 2021. The 2024 GA will be held in Cape Town, South Africa. This will be first IAU GA to be held on the continent of Africa.

Next year, the IAU will celebrate its 100th anniversary. Many activities are planned to celebrate this occasion starting with the “IAU 100: 100 Years Under One Sky” that will take place on 11/12 April 2019 in Brussels where the initial IAU convention was signed in 1919.

Respectfully submitted,
K. I. Kellermann, Chair
R. Blandford
D. Soderblom