DIVISION J GALAXIES AND COSMOLOGY

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DIVISION J COMMISSIONS

Div. J / Commission J1 Galaxy Spectral Energy Distributions

(Inter-Division D-G-H-J)

(Inter-Division B-H-J)

Div. J/ Commission J3 Galaxies at the Epoch of Reionisation

Div. J / Commission X1 Supermassive Black Holes, Feedback

and Galaxy Evolution (Cross-Division D-J)

Div. J / Commission H4 Stellar Clusters

throughout Cosmic Space and Time

(Inter-Division G-H-J)

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Annual REPORT 2022-2023

Division J continues to promote research, education and outreach on topics related to the physics of the Universe and of galaxies beyond the Milky Way. The main themes of the Division are: physics and content of the Universe, evolution of structures, formation and evolution of galaxies, spatially resolved galaxies, science and data analysis methods for extra-galactic and cosmological surveys.

To date, Division J has 3872 active members, of which 342 are junior members. We are particularly pleased to note that there has been a $\sim 25\%$ increase in the number of junior members since the last reporting year, which indicates the relevance of the Division amongst the new generation of scientists. The scientific goals of the Division continue to be supported by its previous Commissions: Inter-Division D-G-H-J Commission J1 "Galaxy Spectral Energy Distributions", Inter-Division B-H-J Commission J2 "Intergalactic Medium", Commission J3, "Galaxies at the Epoch of Reionisation" as well as by the Cross-Division D-J "Supermassive Black Holes, Feedback and Galaxy Evolution", and the affiliated Inter-Division G-H-J Commission H4 "Stellar Clusters throughout Cosmic Space and Time".

The President Kim-Vy Tran continues to organise monthly videoconference meetings for the Division J Steering Committee (SC) to work on planning IAU events, coordinating with the IAU Executive Committee, and reviewing proposals. The President maintains and distributes relevant documents to the SC members for providing feedback and editing as needed. The combination of video meetings with shared folders and email ensures timely communications for the SC members who are spread across multiple timezones.

A major highlight of 2022 was the successful General Assembly (GA) in August 2022 hosted by South Korea. The Division J SC prepared the program for the two divisions days that included talks by the three most recent PhD prize-winners, 14 contributed talks selected from submitted abstracts, and 12 invited talks. The hybrid format allowed speakers to join remotely and topics ranged from intracluster stars to supermassive black holes in the early universe. We are grateful to our South Korean hosts who truly went above and beyond to organize the GA after the unprecedented disruption due to the COVID pandemic.

The main activity for the second half of 2022 was to review and advise on the Letters of Intent for the IAU meetings to be held in 2024. The SC provided feedback on the Letters of Intent and support letters for proposals when requested. A main recommendation was for the organisers to observe and implement the IAU policies with respect to geographic, gender, age and ethnicity balance, and to support inclusion and diversity. Of note is that of the 10 proposals with Division J as the coordinating division, 8 were led by women.

The SC reviewed all of the proposals where Division J was the coordinating or cross-listed division and provided recommendations to the IAU Executive Committee in March 2023. There was heavy over-subscription for IAU meetings in connection with the GA in 2024 to be held in Capetown, South Africa. The Division J proposals were very strong, and we hope that all the proposed IAU meetings will be held either in 2024 or at a future date.

Another major activity was to review the applications for the IAU PhD prize for 2022, and the SC had the honor of considering 18 truly outstanding candidates for Division J. As with every year, selecting a single winner is nearly impossible. Using a rubric to ensure a consistent approach to evaluating each nominee on their research excellence and impact, the SC selected the Division J PhD prize winner and honorable mention for 2023.

The Division J SC does not consider gender in evaluating candidates for the PhD prize, the rubric is specifically focused on scientific excellence demonstrated by research publications and letters of support. However, we note that the last four Division J PhD prize-winners are gender representative: 2018 (male), 2019 (female), 2020 (female), 2021 (male). For 2022, the top 8 nominees who were evaluated in two rounds of reviewing also happened to be gender representative (four women, four men). We strongly encourage all students to consider applying for the PhD prizes.

Within all the activities of Division J, we reaffirm commitment to the IAU values and oppose any forms of discrimination or harassment. We strive to foster a welcoming culture that represents and celebrates our diverse global community.