



Division J Galaxies and Cosmology

Report from the Division J (Galaxies and Cosmology) of the International Astronomical Union for the period August 2018 to 31 December 2019.

Description: Division J encompasses the astrophysics of the universe and galaxies, not including the Milky Way. For a more detailed description of the science related to IAU's Division, see: https://www.iau.org/science/scientific_bodies/divisions/J/.

Structure (Table 1) and membership: As of 14 April 2020, Division J has 3519¹ members. We did not find a lot of information about the evolution of this number except that there were 2600 members in February 2014, after the first version of Div. J (August 2012, after Beijing XXVIII GA). And there were about 3216 members at the beginning of 2016. This means an increase of +23.7% in 2014 – 2016 and another +10% in 2016-2020. Div. J grew by 36.5% in 6 years or an average increase of ~150 members per year since Div. J was created.

Last name	First name	Role in Division
Burgarella	Denis	President of Division J
Tran	Kim-Vy	Vice-President of Division J
Leitherer	Claus	Advisor (former President)
Popescu	Cristina	President Commission J1
D'Odorico	Valentina	President Commission J2
Jones	Christine	President Commission X1
Bruzual	Gustavo	Member Steering Committee
Da Cunha	Elisabete	Member Steering Committee
Hunt	Leslie	Member Steering Committee
Knapen	Johan	Member Steering Committee
Mould	Jeremy	Member Steering Committee
Wofford	Aida	Member Steering Committee

Table 1: Division J organization and Steering Committee since the 2015 General Assembly and until the 2018 one on Busan (Korea).

Commissions: Division J hosts 4 commissions, all of them shared with other IAU divisions because of the inter-disciplinarity of the science studied by Div. J members.

Inter-Division D-G-H-J Commission J1: Galaxy Spectral Energy Distributions (209 members as of 14 April 2020). The justification for an SED commission is to provide a (virtual) meeting room to astronomers around the world interested in galaxy SEDs without putting limits on time or space. There are two Working Groups (WGs) associated with this commission: the first one merged from two WGs (RELIGAS and DB2SED) created after the 2015 IAU GA, and, the recommendations of Commission J1. The second one (Linking the Imprint of Low and High Energy Processes on Galaxy SEDs) was created in 2019.

- Cristina Popescu (President)
- Nikolaos Kylafis (Vice-President)
- Daniel Schaerer (Secretary)
- Inter-Division B-H-J Commission J2: Intergalactic Medium (124 members as of 14 April 2020). Its purpose is to provide a forum for exchanging information of use to its members specific to the Intergalactic Medium (IGM), to coordinate discussion and

¹ https://www.iau.org/science/scientific_bodies/divisions/J/members/



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planning papers with other Commissions relating to the IGM, and to assist in coordinating meetings on the IGM.

- Valentina D’Odorico (President)
- Hsiao-Wen Chen (Vice-President)

- Inter-Division G-H-J Commission H4: Stellar Clusters throughout Cosmic Space and Time (225 members as of 14 April 2020).
 - Amanda Karakas (President)
 - Francesca D’Antona (Vice-President)

- Cross-Division D-J Commission X1: Supermassive Black Holes, Feedback and Galaxy Evolution (389 members as of 14 April 2020).
 - Thaisa Storchi-Bergmann (President)
 - Christine Jones (Vice-President)

Publications: In the last triennial report, a census for refereed publications was performed to give an idea of the numbers of publications of the proportion of work in various the two sub-fields of Div. J.

- For the period from 2016 to April 2018, the SAO/NASA Astrophysical Data Service tallies these counts according the appearance of key words in the abstracts:
 - galaxies: 20826
 - cosmology: 11847
- For the period from 2018 to April 2020, i.e. about the same duration, the SAO/NASA Astrophysical Data Service tallies these counts according the appearance of key words in the abstracts:
 - galaxies: 20512 (-1.5%)
 - cosmology: 15787 (+33%)

Conveying information to members: In 2019, we sent emails to the members of Division J about topics of interests such as grant applications for the IAUS358 on Astronomy for Equity, Diversity and Inclusion, as well as announcements for IAU symposia. In addition to these ones, we informed our member about the symposia proposals and the IAU PhD prize. We also posted, with the help of IAU, the Division webpage: https://www.iau.org/science/scientific_bodies/divisions/J/info/commissions/.

IAU symposia: These symposia coordinated by Division J took place during this 2019 reporting period:

- IAUS 352: Uncovering early galaxy evolution in the ALMA and JWST era (June 2019, Portugal)
- IAUS 353: Galactic Dynamics in the Era of Large Surveys (June 2019, Shanghai, China)
- IAUS 356: Nuclear Activity in Galaxies Across Cosmic time (October 2019, Addis Ababa, Ethiopia)

Participation to EC Meeting: The Steering Committee of Division J, as represented by President Denis Burgarella supported the EC100 (Rome, Italy). The SC evaluated all submitted symposia and selected the IAU prizes for 2019.

IAU PhD Prize 2018: Jorryt Matthee, Netherlands, was selected by Division J for the IAU PhD Prize 2018. His PhD title is: “Identifying the origin of galaxy formation” (October 2018) in Leiden University.