COMMISSION J1 **GALAXY SPECTRAL ENERGY DISTRIBUTIONS**

GALAXY SPECTRAL ENERGY DISTRIBUTIONS

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The spectral energy distributions (SEDs) of galaxies contain information on the stellar, gaseous, and dust content in galaxies, as well as on their cosmic rays and magnetic fields. Because of the multi-wavelength dimension and the large variety of physical processes involved, galaxy SEDs are of interest for many different astrophysical communities, both observational and theoretical. Accordingly, the mission of Commission J1 continues to be that of providing a forum for observers and theoreticians working in different fields of galaxy formation and evolution, cosmology, interstellar matter, our Galaxy and the nearby universe, stars and stellar evolution, high energy astrophysics, and astro-particle physics to tackle current challenges in modern astrophysics through galaxy SEDs.

The Galaxy Spectral Energy Distribution Commission (Galaxy SED, C.J1) is an Inter-Commission, shared among Division D (High Energy Phenomena and Fundamental Physics), Division G (Stars and Stellar Physics), Division H (Interstellar Matter and Local Universe), and Division J (Galaxies and Cosmology). The parent division is Division J.

Commission J1 was created following the IAU General Assembly held in Honolulu, in August 2015. This is the third term of the commission, with the first two terms having as presidents of the Commission Denis Burgarella (2015-2018) and Cristina Popescu (2018-2021). In 2021, Nikolaos

Kylafis took over as President of the Commission, with Ralf Siebenmorgen being elected Vice-President of the Commission. The President appointed Ignacio Ferreras as Secretary of the Commission. The President acknowledges support and guidance from the Advisor of the Commission, Cristina Popescu.

At the beginning of the new term, Commission J1 started with an evaluation of the number and distribution of its members. To date the commission has a total of 223 members, making it comparable in size with the inter-division G-H-J Commission H4 (Stellar Clusters throughout Cosmic Space and Time). It is a medium size Commission that has been continuously increasing in size, proving its relevance to the community. Thus, the Commission saw a 13% increase in its membership since 2018 (the beginning of the previous term).

The analysis of the geographic distribution of the members of Commission J1 showed a very wide spread, amongst all continents and a large number of countries, including countries with smaller astrophysics communities. The gender distribution shows that 28% of the members are female. The Commission has 7 junior members.

The Commission discussed ways of promoting its goals by establishing a series of talks on relevant topics, to be given on a virtual basis via Zoom. The talks will be recorded and distributed to its members and beyond. The talks are meant to also provide a forum for discussion on hot problems in the field. The Commission also discussed the possibility of leading efforts for writing white papers and solving specific problems through collaborations among its members.

In the 2021-2022 period, the President of Commission J1 participated in the parent Division's meetings. He read, ranked, and advised on the selection of IAU symposia. He also participated in the ranking and the selection of the IAU PhD Thesis prize. The President gave advise on the organisation of the Division J Day at the XXXIst General Assembly in Busan, South Korea.

Commission J1 endorsed IAU Symposium 362 "Resolving the Rise and Fall of Star Formation in Galaxies" (chairs Tony Wong and Eva Schienerer), which will take place between 9 and 11 August 2022 during the General Assembly.

Commission J1 continues to endorse the directions put forward by the previous president, Cristina Popescu, as follows:

- continue to promote inter-disciplinary research between different fields of astrophysics, both theoretical and observational, maximising science impact of existing data archives and modelling algorithms in the context of galaxy SEDs,

- facilitate collaborative projects for new observatories with strong potential for scientific leverage by linking different parts of the electromagnetic spectrum covered by existing or planned observatories,
- support the participation of under-represented minorities in the different fields of research linked to galaxy SEDs,
- promote the awareness of students and early career researchers to opportunities of cross-field research by organising and supporting school-type meetings linked to the theory and analysis of galaxy SEDs.