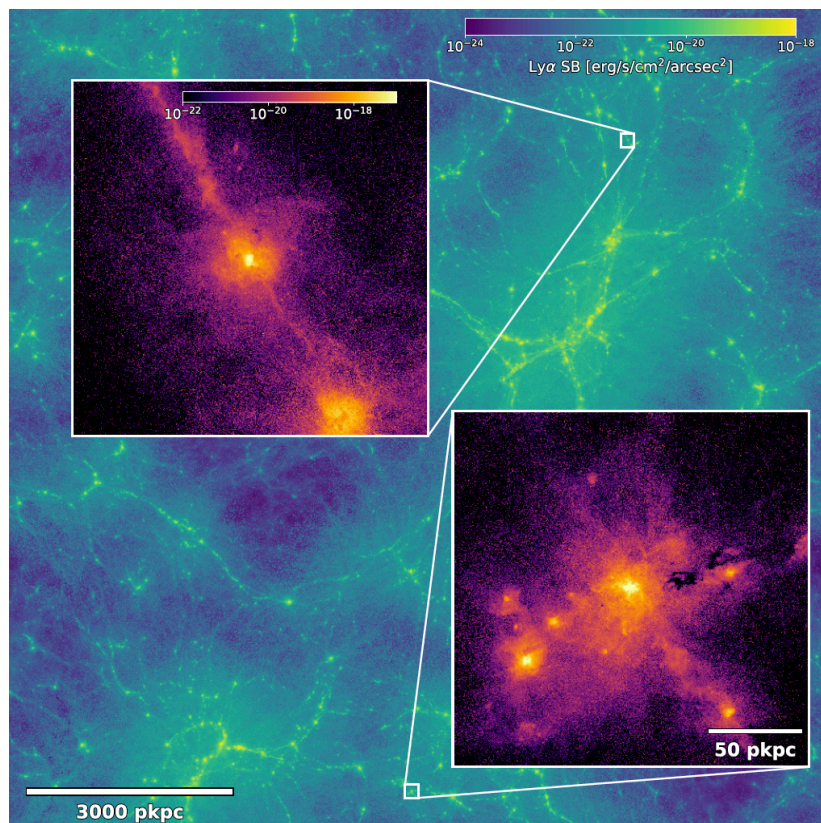


# 2021 Annual Report on the activity of IAU Commission J2

*Inter-Division B-H-J Commission Intergalactic Medium*



**President:** Celine Peroux

**Vice-President:** Benedetta Ciardi

**At-large members:** Wei Cui, Simon Morris, Emma Ryan-Weber, Matteo Viel

**Past President:** Valentina D'Odorico

**Advisor:** Avery Meiksin

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## Scientific Background

The overarching goal of the "J2 – Inter-Division B-H-J Commission Intergalactic Medium" is to promote research on galaxy formation and cosmology from the perspective of the physics of the gas component, bridging the largest to the smallest scales. The complex life cycle of galaxies is governed by the gaseous reservoirs of their interstellar and circumgalactic media, where gas collapses from large, intergalactic (cosmological) to small (microscopic) scales. As it does so, the gas transitions through a number of distinct phases, from the hot and diffuse to the molecular, each with unique observational signatures, from the radio and sub-mm through the UV, optical, infrared to the x-ray.

## Division J2 Activities

The new division had a first meeting in Summer 2021 and meets regularly since Fall 2021. The achievements so far include advertising the division to astrophysics communities in most countries to increase the membership, including among younger generation researchers. The division has also put together a new document summarising the state-of-art in the field as well as the future ground-based and space missions which are likely to play an important role in advancing this field of research. The document is aimed at providing various national and international road map exercises an increased visibility of Intergalactic Medium science. The division is also in the process of updating its IAU web page, including maintaining an up-to-date list of relevant meetings.

## Contribution to Division J

The division J2 president has attended most of the monthly Division J meetings. As part of this, she has participated to the selection of the IAU Symposia for 2023. In addition, she has contributed to the two rounds of selection of the IAU PhD prizes for 2021. Finally, she took part in assembling the agenda of the 2022 IAU General Assembly Division Day by identifying and encouraging young scientists active in the field to apply.