Astro Interview Seminar

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Supermassive Black Holes as Cosmic Architects: Insights and Future Directions

Time: 14:00-15:00, 13 December (Friday), Shanghai time

Venue： N600

Host: Dong Lai (赖东）

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Abstract:

Supermassive black holes (SMBHs), residing at the centers of galaxies, play a pivotal role in shaping the formation, evolution, and structure of their host galaxies. My research focuses on unraveling the dynamic interplay between SMBHs and their environments, particularly through precise measurements of black hole masses and the feedback processes that regulate star formation and galaxy growth. Using advanced observational facilities, such as Keck, VLT, ALMA, HST, JWT, and cutting-edge instruments like ELT/HARMONI, I aim to address key challenges in the field, including the detection of elusive intermediate-mass black holes and understanding the mechanisms of black hole formation, growth, and feedback.

This talk will highlight my discoveries in SMBH research, including refined mass measurements in galaxies below the Milky Way scale, and the transformative potential of next-generation observatories in probing SMBH-host galaxy co-evolution. I will also discuss how these studies inform broader questions about cosmic structure formation and the future of high-resolution, multi-wavelength observations in extragalactic astronomy. This journey from local galaxies to the high-redshift universe offers a roadmap for exploring the next frontiers of observational astrophysics.

Biography:

I received my Ph.D. in Physics from The University of Utah, focusing on astrophysics and intermediate-mass black holes in dwarf elliptical galaxies. I continued my research as an ALMA Fellow at the National Astronomical Observatory of Japan (NAOJ). After that, I joined the ELT/HARMONI Science Team as a Postdoctoral Research Associate at the Centre de Recherche Astrophysique de Lyon (CRAL) in Lyon, France.