DEPARTMENT OF PHYSICS
THE UNIVERSITY OF HONG KONG

香港天文與天體物理研究所
THE HONG KONG INSTITUTE FOR ASTRONOMY AND ASTROPHYSICS

HKIAA SEMINAR

The Local Hot Bubble:

Lessons from X-ray CCDs and prospects with NewAthena

SPEAKER

Dr. Michael Yeung

MAX PLANCK INSTITUTE FOR EXTRATERRESTRIAL PHYSICS



Dr. Michael Yeung is a postdoctoral researcher at the Max Planck Institute for Extraterrestrial Physics in Garching, Germany. He received his PhD from the same institute in 2025, where he dissected the soft X-ray background observed by eROSITA into its physical components, with particular attention to solar wind charge exchange in the heliosphere, the local interstellar medium, and the eROSITA bubbles.

Before moving to Germany, he earned his MPhil and BSc degrees at HKU under Prof. Jeremy Lim. At HKU, he combined Hubble Space Telescope and Keck Observatory data to study star formation and stellar populations in brightest cluster galaxies, and his MPhil thesis reconstructed the velocity structure of strongly lensed galaxies observed with ALMA. His current work continues to explore the diffuse X-ray sky, superbubbles and their links to the circumgalactic environment.

ABSTRACT

Our Solar System sits in a million-Kelvin, low-density bubble that is about 100-200 pc across, expanded by multiple supernovae over the past ~20 Myr. I will review our current knowledge of this Local Hot Bubble, primarily from X-ray observations, but also combine multiple lines of evidence, including radioisotopes found on Earth, to paint a coherent picture of this local region.

NewAthena, the next-generation flagship X-ray mission, will feature a micro-calorimeter that will resolve many important diagnostic lines in the soft X-ray band. I will demonstrate how NewAthena, or more generally, eV-level spectral resolution, can answer long-standing questions about the Local Hot Bubble by generating and analysing synthetic NewAthena observations.

17 November 2026 (Tuesday)

1:30 – 2:30 PM

Venue: EH102, 1/F, Eliot Hall

Main Campus, The University of Hong Kong

ZOOM FOR ONLINE PARTICIPANTS

Meeting ID 964 7297 1072
Password 410133
hku.zoom.us/j/96472971072

Enquiries: hkiaadir@hku.hk · +852 3917 3416

hkiaa.hku.hk

THE HONG KONG INSTITUTE FOR ASTRONOMY And ASTROPHYSICS
香港天文與天體物理研究所