NSYSU physics 書報討論

Weekly Seminar

First Light: JWST as a Time Machine to the Early Universe

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14:10-15:00 Thu-19/Nov/2026, at 地址: PH2006

Abstract

Understanding when and how the first stars and galaxies formed is essential for uncovering the early chapters of cosmic history. Exploring this formative era is a central goal of the James Webb Space Telescope (JWST). The first four years of JWST observations have brought us significantly closer to studying the first generation of pristine stars while revealing an early universe full of surprises.

In this talk, I will highlight some of the most distant galaxies we have discovered in recent years and discuss how they are reshaping our understanding of early galaxy formation. I will then explore the search for the most metal-poor galaxies, including possible impostors that complicate their identification. Gravitational lensing offers an even closer look at this era, allowing us to resolve individual star clusters in galaxies within the first 500 million years of cosmic history. Finally, I will discuss the surprising emergence of supermassive black holes in the early universe and the mysterious population of "Little Red Dots" discovered by JWST.

Together, these discoveries offer new clues to how the first luminous objects formed and evolved. Upcoming JWST programs will extend this exploration, bringing us closer to identifying the first stars and understanding their role in shaping the galaxies we observe today.

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