



Allison Kirkpatrick
University of Kansas

December 5, 2022 at 4:00 pm in SPL 57

The James Webb Space Telescope: Revealing the Secrets of an Invisible Universe



The James Webb Space Telescope (JWST) launched on December 25, 2021, and the initial images have been stunning. JWST provides an unprecedented look at wavelengths not visible with any other existing telescope. In this talk, I will review the new discoveries made by the Cosmic Evolution Early Release Science (CEERS) team, which received some of the first images taken with JWST. Our team has identified the earliest known galaxy to date, which has a mass that exceeds predictions by galaxy evolution models. We have identified heavy metals in galaxies located 11 billion years in the past, implying earlier chemical enrichment and higher star formation rates than previously thought. We have examined the morphologies of star forming galaxies and found that disk-like structure is in place earlier than previously predicted. Finally, we have identified growing supermassive black holes in the distant universe. We find that supermassive black hole growth is common, and that the host galaxies of these black holes have a surprising disk-like structure, similar to star-forming galaxies. Together, these results paint an unexpected, tantalizing picture of how galaxies grow and change over time. Without JWST, our knowledge of the universe would be incomplete.

Host: Meg Urry

Connection info: <https://yale.zoom.us/j/99729391069> Password: 519420

Physics Club is a weekly colloquium of general interest to the Department of Physics, Applied Physics, Astronomy, and Mathematics. The series is aimed at graduate students, postdoctoral researchers, research staff and faculty. The name dates to the late 1890s, the era of J Willard Gibbs, who influenced the intellectual life at Yale

