Exploring the Wonders of the Early Universe: Green Pea Galaxies and Light Flux

Mandic, Mina (School: Saint Paul Academy and Summit School)

Green Peas are a unique set of galaxies characterized by low mass, low density, and high star formation rate. These properties are shared with Lyman alpha emitters, one of the first types of galaxies that existed in the early universe and played a role in reionization, a phase in the early evolution of the universe that is not well understood. Investigating the properties of Green Peas would help understand the Lyman alpha emitters and their contribution to reionization. This project examines the luminous flux distribution emitted by Green Peas, separating the light from the stars and the surrounding gas. Python code was used to extract images of 80 galaxies from the Sloan Digital Sky Survey database and to create images of the components produced by stars and by oxygen gas. These images were used to make plots of Flux vs Distance from the center of each galaxy to show the regions from which the two components were emitted. The results show that the stars and the oxygen gas emit light from the same locations within the galaxy.

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