



PHYSICS AND ASTRONOMY SEMINAR

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Cosmological Simulations of the Early Universe, and Probing r-process Nucleosynthesis with Meteorites

The chemical composition of the universe is continuously evolving. Since the Big Bang nucleosynthesis, countless number of astrophysical events such as supernova explosions and neutron star mergers have synthesized heavier elements inside galaxies. Metal-poor stars in the Galactic halo and in local dwarf galaxies are windows into the nature and nucleosynthesis of the first stars that formed during the first billion years of cosmic evolution. To best interpret the chemical signatures locked in today's metal-poor stars, the mixing of heavy elements and the formation and assembly of galaxies in the primitive stages of the universe must be understood. In the first part of this seminar, I will present ongoing efforts that aim to capture the complex chemical evolution cycle of the early universe, using cosmological hydrodynamic simulations. In the second part, jumping to a later time in the chemical evolution history of our Galaxy, I will present how to use traces of radioactive isotopes in meteorites to learn about the astrophysical sites that contributed to the composition of our Solar System.

Monday, June 7, 2021

2:00 p.m.

Zoom link: <https://uvic.zoom.us/j/82203756592>