

Spring 2020 Colloquium

Department of Physics & Astronomy, TAMU-Commerce

Feb 20, Thursday, 4-5 PM in Science Building 127

(coffee and cookies will be served at 3:50 PM)

Astronomy

The Once and Future First Galaxies

Dr. Mia Bovill

Texas Christian University



Dr. Mia Souda Bovill earned BS (2004) degrees in Physics and Astronomy at the University of Maryland before earning a MS (2006) and Ph.D. (2011) in Astronomy at the University of Maryland. Her Astronomy Ph.D. research topic was on simulations of the fossils of the first galaxies in the Local Group. After a year at the University of Texas at Austin, she received a FONDECYT Fellowship at Pontificia Universidad Catolica de Chile where she expanded her study of dwarf galaxies to the Local Volume as part of the Survey of Centaurus A's Baryonic Structure and the Neighborhood Watch. After her time in Santiago, Dr. Bovill worked at the Space Telescope Science Institute on the detectability of the first stars with the James Webb Space Telescope. In the fall of 2018, Dr. Bovill joined Texas Christian University as an Assistant Professor. At TCU, she is currently continuing her research on the formation, evolution and fate of the first stars and galaxies.

Abstract

The first billion years after the Big Bang consist of the cosmic dark ages, followed by the epoch of the first stars and galaxies. Though the broad strokes of the transition from the cosmic dark ages to the modern universe are known, the details remain elusive. Upcoming observatories such as the James Webb Space Telescope will allow us to observe further into the era of first light, however direct detection of the first stars and galaxies will be beyond their reach. My work marries cutting edge simulations with current and upcoming observations to constrain the number and properties of the first stars and galaxies both at high redshift and with near field cosmology. I will be presenting new results on the detectability of the first galaxies with the James Webb Space Telescope in addition to the possible detection of the first fossils of the first galaxies beyond our Local Group.