

Fall 2020 Colloquium

Department of Physics & Astronomy, A&M-Commerce

Oct 1, Thursday, 4-5 PM in Science Building 127

Live Zoom Meeting

<https://tamuc.zoom.us/j/97469553436>

Zoom Meeting ID: 974 6955 3436

Astronomy

Probing Star Formation Feedback at its Most Extreme

Dr. Christy Tremonti

University of Wisconsin-Madison



Dr. Christy Tremonti earned a BA (1994) at Colgate University and a Ph.D. degree (2003) in Astrophysics at Johns Hopkins University. Her Ph.D. research was on young star clusters and galactic chemical evolution. She was a postdoc at the University of Arizona where she spent as much time as possible at telescopes gathering data on galactic winds. In 2009, Dr. Tremonti began her appointment as an assistant professor at the University of Wisconsin-Madison where she is continuing to do research on the astrophysics of galactic winds. More information on her research can be found at

<http://www.astro.wisc.edu/our-people/faculty/tremonti/>

Abstract

A key question in galaxy evolution is how the formation of stars is regulated. Stars form out of cold gas, but the most massive stars and their subsequent supernovae supply energy and momentum to the surrounding gas that make it more difficult for subsequent generations of stars to form. In galaxies with very high star formation rates, the collective impact of these 'feedback' process can be extreme with gas being ejected out of the galaxies in spectacular outflows called 'galactic winds'. In this talk, I will discuss the physics underpinning the driving of galactic winds and I will present some new observations of a sample of compact massive starbursts that are driving the fastest winds yet observed. One surprising feature of these outflows is that they contain cool ionized and molecular gas moving at velocities of ~ 2000 km/s. I will conclude by evaluating some recent ideas for accelerating cold gas to these velocities without destroying it.