

Spring 2026 Colloquium

Thursday, February 5, 2026

4pm to 5pm

127 McFarland Science Building

(Refreshments available at 3:50pm)

Mapping cosmic star formation with the CO Mapping Array Project

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Abstract

The process of star formation is key to our understanding of galaxies, as well as the use of galaxies to probe fundamental physics. Measuring star formation at high-redshift, however, is often difficult and expensive. In this talk, I will discuss the results of the second observing season of the CO Mapping Array Project (COMAP), which uses the new observational technique of line intensity mapping to explore cosmic star formation from a new angle. COMAP has reported the deepest ever intensity mapping observation of the dense-gas tracing CO(1-0) emission line near cosmic noon. I will provide an overview of the COMAP results, and discuss what it and other intensity mapping results can tell us about high-redshift galaxies. I will close by discussing exciting future extensions to COMAP happening in the next few years.

Dr. Patrick Breysse is an Assistant Professor of Physics at Southern Methodist University. His research focuses on galaxy evolution and large-scale structure cosmology using the novel observational technique of line intensity mapping. Patrick earned his Ph.D. at Johns Hopkins University, and before joining the faculty at SMU held postdoctoral fellowships at the Canadian Institute for Theoretical Astrophysics and New York University.

