

Spring 2018 Colloquium

Department of Physics & Astronomy, TAMU-Commerce

Mar 29, Thursday, 4-5 PM in Science Building 127

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

Astronomy

The HII Region Discovery Survey

Dr. Dana Balser

National Radio Astronomy Observatory



Dr. Balser earned his BS (1983) and MS (1986) degrees in Engineering Physics and Physics, respectively, at the University of Maine. He earned his Ph.D. degree (1994) in Astronomy at Boston University studying the abundance of ^3He in the Milky Way Galaxy. Dr. Balser was a Jansky postdoc (1994-1997) at the National Radio Astronomy Observatory (NRAO) in Green Bank, WV. In 1997, he became an assistant scientist at the NRAO and helped to commission the GBT. In 2006, he moved to NRAO in Charlottesville, VA (headquarters) and is doing research in

Galactic structure and abundances. More information about Dr. Balser and his research can be found at www.cv.nrao.edu/~dbalser/.

Abstract

HII regions are zones of ionized gas surrounding massive, bright stars. They are the most luminous objects in the Milky Way at mid-infrared to radio wavelengths and can be seen across the entire Galactic disk. They are the archetypical tracers of Galactic spiral structure. Because of their short lifetimes their chemical abundances indicate the present state of the interstellar medium and reveal the elemental enrichment caused by the nuclear processing of many stellar generations. The HII Region Discovery Survey (HRDS) uses primarily the Green Bank Telescope (GBT) and the Australia Telescope Compact Array (ATCA) to observe radio recombination line (RRL) and continuum emission to detect new HII regions. The goal is to increase the sample of HII regions across the Galactic disk. The HRDS strategy, status, and preliminary results will be discussed.