Charee Peters

**Award:** WSGC Graduate and Professional Research Fellowship; $5000.00

**Status:** Ph.D., Astronomy

**Advisor:** Eric Wilcots

**Research Topic:** Variability of Radio Active Galactic Nuclei in the CHILES Field

**Abstract:** It is clear from previous and ongoing surveys that there are many sources that change in brightness over time. There is a wide range of extragalactic phenomena that create events with time-varying brightness. Variable sources have regular changes in brightness, such as the steady accretion of matter onto a super massive black hole at the center of a galaxy, known as active galactic nuclei (AGN). Despite strongly emitting in radio wavelengths, the radio sky is nearly completely unexplored in terms of these variable events. Most radio surveys on AGN variability have not been deep enough, include a small sample, and only have a few observations to understand how AGN are changing on timescales between weeks and months. Improving our understanding of the fundamental nature these sources requires a deep radio continuum survey with extension data to observe changes happening on timescales longer than days and less than years. The combination of the COSMOS HI Large Extragalactic Survey (CHILES) and 14 hours of extension observations, I will begin to answer: what is the variability of radio AGN and can it be used to predict and classify future events?

**Biography:** Charee Peters is currently completing her PhD in Astronomy at the University of Wisconsin-Madison. She received her MA in Astronomy and Physics from the Fisk-Vanderbilt Masters-to-PhD Bridge Program in 2013, and her BS in Physics from the University of Denver in 2011. Her PhD thesis consists mainly of using the new COSMOS HI Large Extragalactic Survey (CHILES). CHILES is a neutral hydrogen 21-cm radio survey conducted at the Very Large Array, a radio astronomy observatory in New Mexico. From this survey, Charee is trying to understand how the radio emission varies over time for different phenomena, including supernovae, active galactic nuclei, and tidal disruption events. In 2011, Charee became the first person in her tribe, Yankton Sioux, to obtain a degree in Physics. Since then, she joined the American Astronomical Society’s Committee on the Status of Minorities in Astronomy as a Committee Member. In her free time, Charee plays roller derby with the Mad Rollin’ Dolls under the alias SiouxperNova #185 and coaches for the Wisconsin Men’s Roller Derby.

**Congressional District:** 2

**Congressional Representative:** Mark Pocan