

## Technical Page

This proposal has not been submitted before.

Proposal Type: Regular  
 General Category: Astronomy  
 Sub-Category: Spectroscopy  
 Observation Category:  
 Total Time Requested: 25 Hours  
 Minimum Useful Time: 1 hr

**Proposal Title:** A Search for Radio Emission from White Dwarfs

*ABSTRACT:*

The study of white dwarf magnetism is still in its infancy, with our knowledge confined to the detection of strong, kG-MG strength magnetic fields on a handful of objects via spectropolarimetric methods. This proposal seeks to dramatically expand our knowledge of the magnetic properties of these stellar remnants by probing their radio emission, using techniques that have proven valuable in the discovery of noteworthy, radio-emitting, magnetic brown dwarfs. Leveraging Arecibo's exquisite sensitivity at high time resolution I will attempt to measure the radio polarization properties from isolated white dwarfs, which would distinguish among potential emission mechanisms, including synchrotron, gyrosynchrotron, and the electron cyclotron maser. The detection of radio emission from an isolated white dwarf would be the first such discovery; it may permit the detection of weaker magnetic fields than have been studied previously, and it may reveal a variety of magnetic phenomena.

Name	Institution	E-mail	Phone	Student
Matthew P Route	Purdue University	mroute@purdue.edu	765-496-0587	no

### Remote Observing Request

- Observer will travel to AO
- Remote Observing
- In Absentia (instructions to operator)

### Instrument Setup

C

### Atmospheric Observation Instruments:

**Special Equipment or setup:** Will use Mock spectrometer.

## **RFI Considerations**

### **Frequency Ranges Planned**

4250 - 5250