

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Stellar
 Total Time Requested: 48 Hours
 Minimum Useful Time: 1.50

Proposal Title: The Continuing TY Dwarfs Survey with A Focus on Promising Targets
ABSTRACT:

Ongoing surveys that search for radio emission from ultracool dwarfs continue to produce valuable results. These low-mass objects have effective temperatures of <3200 K and have fully convective interiors. Although their X-ray and H-alpha emission (which are indicative of magnetic activity) decline with temperature, their radio luminosities remain roughly constant. Surveys conducted at Arecibo Observatory have led to the discovery of the coolest radio-emitting brown dwarf, the 860K 2MASS J10475385+2124234, and the fastest rotating brown dwarf, WISEPC J112254.73+255021.5 (J1122+25), which may have a rotational period as fast as 17 minutes. This proposal seeks to verify the rotational period of J1122+25, and continue to probe cooler brown dwarfs in search of radio emission that may be aurora-like or stellar-like in nature. J1122+25 and one candidate T8 dwarf will be observed during week-long campaigns to detect more highly circularly polarized, high brightness temperature radio flares.

Name	Institution	E-mail	Phone	Student
Matthew Route	Purdue University	mroute@purdue.edu	303-550-4269	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: Mock spectrometer

RFI Considerations

Frequency Ranges Planned

4000 - 5000 MHz