

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Stellar
 Total Time Requested: 35 Hours
 Minimum Useful Time: 2 hrs, 15 mins

Proposal Title: The TY Brown Dwarf Survey

ABSTRACT:

Brown dwarfs lie between giant planets and M dwarf stars in terms of mass, but share properties that overlap with both classes of substellar objects. While searches for radio emission from giant exoplanets have been in vain, at the higher end of this mass range, Route and Wolszczan (2012) have reported the revolutionary discovery of a T6.5 radio flaring brown dwarf with a 900K temperature. This source and another recently detected T dwarf , J1122+25 (Route and Wolszczan 2015), emit radio flares with high brightness temperatures and large degrees of circular polarization via the electron cyclotron maser instability, which occurs in both cool stars and magnetized Solar System planets. This proposal will explore the TY spectral range in a quest for more knowledge about the radio emission, plasma environments, and magnetic properties of progressively cooler, less massive substellar objects that become increasingly similar to giant exoplanets.

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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

N/A