

## Technical Page

This proposal has not been submitted before.

Proposal Type: Regular  
 General Category: Astronomy  
 Sub-Category: Continuum  
 Observation Category: Galactic  
 Total Time Requested: 40 Hours  
 Minimum Useful Time: 2 hours

**Proposal Title:** Radio emission from a T-Tauri star, V830 Tau, and its hot Jupiter companion  
*ABSTRACT:*

A 2-million year old T-Tauri star, V830 Tau, has a Jupiter-mass companion on an approximately circular, 4.93-day orbit determined from radial velocity measurements. Moreover, this system has recently been shown to be a source of the sporadic, possibly synchrotron or gyro-synchrotron radio emission detected with the VLA at 6 GHz and the VLBA at 8.4 GHz. This is the first detection of radio emission from an extrasolar planetary system around a normal star, which potentially offers unique means to study the star, the planet, and star-planet interaction. We propose to conduct a series of observations of V830 Tau with the Arecibo telescope and the Mock spectrometer at 1.4 GHz and 5 GHz in an attempt to detect a possible, rapidly varying cyclotron maser emission that could come from the auroral ovals of either the star or the planet or both, or from the magnetic interaction between the two objects.

Name	Institution	E-mail	Phone	Student
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### Remote Observing Request

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

### Instrument Setup

L-wide                      C

### Atmospheric Observation Instruments:

**Special Equipment or setup:** none

## **RFI Considerations**

### **Frequency Ranges Planned**

L-band

C-band

This proposal requires coordination with Punta Salinas radar within the band 1222-1381 MHz..

This proposal requires coordination with GPS L3 at 1381 MHz.