Proposal Identification No.: A2471
Date Received: 2009-Feb-01

Technical Page

Proposal Type: Regular
General Category: Astronomy
Sub-Category: Continuum
Observation Category: Galactic
Total Time Requested: 40 Hours
Minimum Useful Time: 4 hrs

Proposal Title: Exploring the Giant Planet - Brown Dwarf Interface

ABSTRACT:
We propose to use the Arecibo telescope with its C-band receiver and the WAPP spectrometer, to conduct a survey of giant extrasolar planets and the coolest brown dwarfs in search of bursts of radio emissions from these objects. In designing the search, we have been guided by the lack of radio detections of exoplanets in the previous low frequency surveys and by the surprising discoveries of rapid, broadband outbursts of highly circularly polarized, coherent radio emission from cool brown dwarfs in the 5-8 GHz frequency range, as outlined above. Possible detections of radio emission from the most massive planets and the coolest brown dwarfs would add to our understanding of the much debated transition from the lowest-mass stellar objects to planets. Detection of an exoplanetary radio emission would represent the first genuinely direct observation of any emission from an extrasolar planet and produce very useful constraints on planetary magnetic fields and hence on the interior structure of the planets themselves. They would also permit direct measurements of planetary rotation rates.

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<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
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<th>Student</th>
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<tbody>
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Remote Observing Request

[X] Observer will travel to AO

Remote Observing

In Absentia (instructions to operator)

Instrument Setup

C

Atmospheric Observation Instruments:
**Special Equipment or setup:** We plan to use the WAPP backend. Upgrade to the Mock spectrometer would be very desirable.

**RFI Considerations**

**Frequency Ranges Planned**

4300-5300