This proposal has not been submitted before.

Proposal Type: Urgent
General Category: Pulsars
Observation Category: Galactic
Total Time Requested: 4.5 Hours
Minimum Useful Time: 1.5 hours

Proposal Title: High Frequency Single-Pulse Observations of Millisecond Pulsars

ABSTRACT:
The emission mechanism of pulsars is poorly understood and the most obvious way to gain information about them is to study their pulse profiles. Pulsars are typically folded to produce a high signal to noise ratio average pulse profile but any time dependant structures become hidden. Single pulse analyses may reveal this temporal structure, the energy distribution in pulses, modes of emission, and the details of pulse-to-pulse variability. Pulsar emission is generally linearly polarized, and some show orthogonal modes of polarization. Profile stability can be quantified by calculating the modulation index. We will search for orthogonal polarization modes using single-pulse data. We plan to perform a multifrequency search at L and C band in order to search for single pulses at higher frequencies. This is also an opportunity to explore how the pulse profile changes with frequency. In order to study these phenomena, we propose to observe two pulsars for 4.5 hours.

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

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

Instrument Setup

L-wide       C-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations
Frequency Ranges Planned

This proposal requires Iridium RFI protection at 1612 MHz between 10pm and 6am EST.
This proposal requires coordination with Punta Salinas radar within the band 1222-1381 MHz.
This proposal requires coordination with GPS L3 at 1381 MHz.