Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
General Category: Pulsars
Observation Category: 
Total Time Requested: 4.5 Hours
Minimum Useful Time: 2.25

Proposal Title: Mapping Pulsar Swooshes Over a Full Frequency Spectrum

ABSTRACT:
Pulsars are highly-magnetized rapidly-rotating neutron stars that emit radiation that sweeps past our sightline at highly regular intervals. This periodic radiation can be modulated by many known phenomena, including “swooshes,” or changes in the pulse phase of the emission for multiple pulses. Multiple studies have been done on swooshes at multiple frequencies to pinpoint why and how they happen. Though the ultimate cause of swooshes is still unknown, the two leading theories of swooshes are magnetospheric effects caused by disruption in the magnetic field and tidal effects due to a binary companion. We request 4 hours of continuous observation, 2 at C-band and 2 at X-band, of pulsar B0919+06, one of the two known pulsars that show this phenomenon, in order to study the swooshes at higher frequencies than previously studied and gain insight into how the phenomenon behaves near the surface of the pulsar.

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<tr>
<th>Name</th>
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Remote Observing Request

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

Instrument Setup

X-band C-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none
RFI Considerations

Frequency Ranges Planned