

## Technical Page

Proposal Type: Regular  
 General Category: Pulsars  
 Observation Category: Galactic  
 Total Time Requested: 84 Hours

**Proposal Title:** Variable Substructure in Pulsar Scintillation Arcs

**ABSTRACT:**

Scattering of pulsar radio waves has many observable consequences and has proven a powerful tool for exploring the ionized interstellar medium on a range of size scales. Several years ago we found a new scattering phenomenon, now called scintillation arcs, which shows up as a parabolic feature in the secondary spectra of pulsars. We have explored the scintillation arcs further and found numerous occasions when the arcs show time variable substructure. This substructure, which often times takes the form of inverted subarcs with the same absolute value of curvature, persists for longer than a day but less than a month. Since they involve scattered rays far from the core of the image, scintillation arcs probe ISM structures that are up to 20 times larger than previous scintillation studies. We propose observations of four pulsars over a three week period in order to explore the time variability of scintillation arc substructure.

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**Service Observing Request**

- None
- All of the observing run.
- Part of the observing run.
- Queue Observing

**Remote Observing Request**

- No
- Maybe
- Yes

**Instrument Setup**

430 G      610      L-wide      S-low      327

**Atmospheric Observation Instruments:**

**Special Equipment or setup:** none

**RFI Considerations**

## **Frequency Ranges Planned**

322 - 332

425 - 435

1125 - 1225

1350 - 1550

2000 - 2300

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

This proposal requires coordination with GPS L3 at 1381 MHz.

This proposal requires coordination with AFTWF within the band 425-435 MHz.