

Technical Page

Proposal Type: Regular
 General Category: Pulsars
 Observation Category: Galactic
 Total Time Requested: 30 Hours

Proposal Title: Determining scintillation velocities of binary pulsars with the new Arecibo feeds.
ABSTRACT:

We request a total of 30 hours of telescope time to study the scintillation characteristics as a function of orbital phase of PSR B1534+12. The aim is to use the constraints that the orbital modulation of the scintillation pattern speed would offer to make precise and somewhat independent determinations of the geometry of this system, including the mass, inclination of the binary system, but also of the longitude of the line of nodes, which cannot be determined from timing measurements. This will allow one, and possibly two, extra tests of general relativity. On the other hand, estimates of proper motion (already obtained from the current timing program), together with scintillation speeds and the geometry, would allow estimations of the space velocity and distance of the binary, which is crucial for the interpretation of its measured orbital decay.

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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

327

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

