

Technical Page

Proposal Type: Regular
 General Category: Pulsars
 Observation Category: Galactic
 Total Time Requested: 16.5 Hours
 Minimum Useful Time: 5.5

Proposal Title: Simultaneous Multi-telescope Pulsar Timing

ABSTRACT:

We propose to obtain simultaneous GBT and Arecibo observations of the bright millisecond pulsars (MSPs) J1713+0747 and B1937+21. These data will be used to explore systematic effects present in high-precision pulsar timing and to help answer the question of what ultimately determines the best possible timing accuracy. Resolution of this issue will impact current pulsar timing array experiments that aim to detect the nHz gravitational wave background. It will also help determine what kinds of pulsar timing experiments will be possible with future large-collecting area radio telescopes such as the SKA. We plan to record data simultaneously with both the ASP and GASP pulsar backends and the VLBI Mark 5 baseband recorders. This will also allow us to measure absolute timing offsets to the ASP and GASP systems, and test new methods for investigating MSP scintillation and scattering properties.

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Remote Observing Request

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

Instrument Setup

L-wide S-low

Atmospheric Observation Instruments:

Special Equipment or setup: ASP pulsar backend. VLBI Mark 5 backend.

RFI Considerations

Frequency Ranges Planned

1378-1442

2318-2382

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

This proposal requires coordination with GPS L3 at 1381 MHz.