

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Pulsars
 Sub-Category: Continuum
 Observation Category: Galactic
 Total Time Requested: 3 Hours
 Minimum Useful Time: 60 minutes

Proposal Title: Long term, Broadband Timing Observations of the wide binary PSR J0407+1607
ABSTRACT:

Radio pulsars in orbital systems serve as high-precision monitors of deviations from Keplerian motion, and yield measurements that significantly impact different branches of modern astrophysics with high precision. Long-period binary pulsars can provide access to higher-order timing delays that directly constrain mass and geometric parameters of the system, such as the annual orbital parallax (AOP) and Shapiro timing delay. We request to strategically observe PSR J0407+1607, a bright millisecond pulsar in a 1.8-yr orbit, in order to measure the Shapiro timing delay, AOP and secular orbital variations within the next several years. Recent exploratory observations with Arecibo using the broadband PUPPI backend confirm that J0407+1607 will yield exquisitely precise arrival-time measurements, and will thus serve as an ideal laboratory for making high-precision measurements of relativistic and geometric timing phenomena.

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Remote Observing Request

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

Instrument Setup

430 G L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

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

This proposal requires coordination with GPS L3 at 1381 MHz.