Technical Page

This proposal has been submitted before.

The previous proposal number is 3228.

Proposal Type:	Regular
General Category:	Pulsars
Observation Category:	Galactic
Total Time Requested:	9 Hours
Minimum Useful Time:	45 min

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 the Shapiro timing delay. We request to continue observing PSR J0407+1607, a bright millisecond pulsar in a 1.8-yr orbit, in order to measure the Shapiro timing delay, timing parallax, secular orbital variations and AOP within the next two years. We show that data acquired under the P3228 project exhibit superbly high timing precision, and that preliminary timing analyses indicate significant proper motion and orbital variations. All relevant timing parameters, including the Shapiro delay and AOP, are expected to measured or constrained with additional PUPPI data and the inclusion of arc

Name	Institution	E-mail	Phone	Student
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Remote Observing Request

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

Instrument Setup

430 G

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned