

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Pulsars
 Observation Category: Galactic
 Total Time Requested: 50 Hours
 Minimum Useful Time: 1 hour

Proposal Title: Continuation of timing observations of the planets pulsar, PSR B1257+12

ABSTRACT:

We have recently completed 50-day, high-cadence timing observations of the planets pulsar, PSR B1257+12, using the PUPPI pulsar backend. The data analysis has revealed that the orbit of the inner, 25-day period planet in the system has a 0.3 eccentricity. This places new constraints on the origin of the pulsar planets, and may shed new light on the poorly understood mechanism of neutron star planet formation. We propose to continue medium-cadence, multifrequency timing observations of PSB B1257+12 for one year, sampling the pulse arrival times once a week. With the much improved, 0.5 microsecond timing precision of this pulsar, we will revise orbital parameters of the inner planet, and place much tighter constraints on a possible presence of any additional, very low-mass bodies in the system. Combining the new data with the large database of measurements, dating back to 1991, we will be in position to look for long-term timing effects that could be due to a distant companion.

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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 327

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.