

## Technical Page

This proposal has not been submitted before.

Proposal Type: Director Discretionary Time  
 General Category: Pulsars  
 Observation Category: Galactic  
 Total Time Requested: 40 Hours  
 Minimum Useful Time: 2

**Proposal Title:** High-cadence timing observations of the planets pulsar, PSR B1257+12

*ABSTRACT:*

We propose to resume timing observations of the planets pulsar, PSR B1257+12, with the Arecibo telescope at 430 MHz and L-band frequencies, using the PUPPI backend. We would like to conduct one-month, high-cadence observations to obtain 18 pulse arrival times that should allow us to phase connect our new measurements to the existing data set spanning the period from 1991 through 2009. The new data will also tell us how much improvement in timing precision can be achieved with the PUPPI backend, compared to the 3.5 microsecond long-term, post-fit residual obtained with the Penn State Pulsar Machine (PSPM) for the post-upgrade, 1997-2009 data. If a 1 microsecond precision can be attained, it will be possible to use PSR B1257+12 and other solitary millisecond pulsars visible from Arecibo to explore the currently untouched part of the neutron star planet parameters space involving low-mass bodies in short-period orbits.

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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**

1.15 - 1.73 GHz

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

This proposal requires coordination with GPS L3 at 1381 MHz.