

## Technical Page

This proposal has not been submitted before.

Proposal Type:                    Urgent  
 General Category:               Pulsars  
 Observation Category:        Galactic  
 Total Time Requested:        3 Hours  
 Minimum Useful Time:        1 hour

**Proposal Title:** Grid and Timing Observations of a Millisecond Pulsar in the direction of the Virgo Cluster

*ABSTRACT:*

We request a one-hour grid observation (LST 12:00-13:00) and a separate two-hour timing session (LST 11:40-13:40) of PSR J1239+32, a 4.7 millisecond pulsar in a 4.1-day orbit. This pulsar was recently discovered in survey observations and is in the general direction of the Virgo galaxy cluster. The latter fact is of potentially great interest to the pulsar timing array (PTA) projects across the globe for its usefulness in substantially increasing PTA sensitivity towards gravitational wave signals as discussed in the attached proposal. We therefore request a total of three hours in order to localize the source in the Arecibo sky and better characterize its spectral and orbital properties. We will conduct both observations using the L-wide (1400 MHz) Gregorian receiver, and the PUPPI backend for high-precision data acquisition, for total observing time of three hours.

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### Remote Observing Request

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

### Instrument Setup

L-wide

### Atmospheric Observation Instruments:

**Special Equipment or setup:** We will use the PUPPI pulsar backend for both observations. This has been fully integrated into the CIMA observing software and is readily usable in pulsar observations

## **RFI Considerations**

### **Frequency Ranges Planned**

1150-1730 MHz

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

This proposal requires coordination with GPS L3 at 1381 MHz.