

## Technical Page

This proposal has not been submitted before.

Proposal Type: Regular  
 General Category: Pulsars  
 Observation Category: Galactic  
 Total Time Requested: 22.5 Hours  
 Minimum Useful Time: 1 hour

**Proposal Title:** Determining the masses and evolutionary history of the pulsar binary system PSR J1829+2456

*ABSTRACT:*

We request 42.5 hours of observations to observe PSR J1829+2456, a double neutron star system in a 1.18-day orbit. Discovered over a decade ago, previous timing measurements have allowed a significant determination of periastron advance, and therefore a total system mass of 2.5(2) solar masses. Thus far this has only set limits on the individual component masses. Our intention with these proposed observations is to measure the individual component masses, through a significant measurement of Einstein delay in this system. We also wish to constrain this parallax of PSR J1829+2456 in order to determine its distance, and together with a predicted order-of-magnitude improvement in proper motion, we will be able to determine the space motion of this pulsar system. The above will allow us to constrain its formation and evolution. We will also search for the NS companion, which may also be an emitting pulsar.

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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**

422-442

1180-1780

This proposal requires Iridium RFI protection at 1612 MHz between 10pm and 6am EST.

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

This proposal requires coordination with GPS L3 at 1381 MHz.