

Technical Page

Proposal Type: Regular
 General Category: Pulsars
 Observation Category: Galactic
 Total Time Requested: 57 Hours

Proposal Title: Relativistic Measurements of Binary Pulsar B1913+16

ABSTRACT:

The binary pulsar B1913+16 continues to be an excellent laboratory for the study of relativistic gravitation. Analysis of measured pulse arrival times has provided conclusive evidence for orbital decay due to gravitational radiation emission, in excellent agreement with general relativity. Additional relativistic effects will become measurable with plausible gains in observing sensitivity and favorable orbital geometry. Observations of the system are also contributing uniquely to basic pulsar astrophysics. While observers are bound forever to see the same cut across the emission beams of most pulsars, geodetic precession of the spin axis of B1913+16 is enabling us to map the emission beam in *both* dimensions. We propose to continue our long-term timing and polarimetry measurements with an intensive observing session this summer, using much larger bandwidths than were previously available.

Name	Institution	E-mail	Phone	Student
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Service Observing Request

- None
- All of the observing run.
- Part of the observing run.
- Queue Observing

Remote Observing Request

- No
- Maybe
- Yes

Instrument Setup

L-wide

Atmospheric Observation Instruments:

Description of Observer Equipment: Princeton Mark III and Mark IV pulsar backends.

Special Equipment or setup: Four WAPPs

RFI Considerations

Frequency Ranges Planned

We will consult with the observatory staff to help decide which frequencies within the L-wide band to use for the four-WAPP system so as to minimize RFI. The result may cause changes in some answers below.

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.