

Technical Page

Proposal Type: Long-term
 General Category: Pulsars
 Observation Category: Galactic
 Total Time Requested: 192 Hours

Proposal Title: Multifrequency Timing of PSR B1257+12 and PSR B1534+12

ABSTRACT:

We propose to continue long-term timing of the planets pulsar, PSR B1257+12, and a 10-hr relativistic binary pulsar, PSR B1534 +12, with the Arecibo telescope and the Penn State Pulsar Machine at 430 MHz, 1130 MHz, and 1400 MHz. For PSR B1257+12, further systematic observations will allow us to better determine the orbit of a newly detected, 4-year, low-mass planet and to refine recent determinations of the true masses of planets B and C. For PSR B1534+12, we will be able to gain much better understanding of the currently unmodeled long-term timing effects, possibly caused by geodetic precession of the pulsar's spin axis and to further improve the determinations of the currently measurable relativistic orbital effects. By extracting interstellar scintillation information from the timing data for PSR B1534+12, we will obtain additional measurements of its transverse orbital speed variations. These measurements will allow us to determine the normally inaccessible longitude of the ascending node of the orbit.

Name	Institution	E-mail	Phone	Student
Alex Wolszczan	Penn State Univer- sity	alex@astro.psu.edu	(814) 863 1756	no

I want to do remote observing.

Instrument Setup

430 G L-wide 430 CH receiver L-narrow

Atmospheric Optical Instruments:

Special Equipment or setup: The Penn State Pulsar Machine (PSPM)

RFI Considerations

Frequency Ranges Planned

426 - 434
 1126 - 1134
 1406 - 1424

This proposal requires coordination with AFTWF within the band 425-435 MHz.