Technical Page

Proposal Type:	Short
General Category:	Pulsars
Observation Category:	
Total Time Requested:	4 Hours
Minimum Useful Time:	1 hour

Proposal Title: Observational Test of Non-radial Oscillations in Radio Pulsars

ABSTRACT:

This proposal will definitively test a recently proposed model for the short time variability seen in radio pulsar emission. At the same time, it will give both high school and undergraduate students involved in the Arecbio Remote Command Center (ARCC) project experience in performing radio pulsar observations simultaneously with both the Arecibo and Green Bank Telescopes. In 2004, Clemens and Rosen developed a model based on asteroseismological techniques to explain the rich and diverse phenomena seen in the individual pulses, or sub-pulses, emitted from radio pulsars. The model was able to account for the sub-pulse behavior seen in PSR B0943+10. Given the initial success of this model, we want to further investigate its validity. The Clemens and Rosen model can predict the sub-pulse behavior at a given observing frequency using constraints obtained by sub-pulse observations at a significantly different frequency band. Hence, this model can be tested by simultaneously observing a pulsar at two very different frequencies. This will be done by observing three radio pulsars with both Arecibo and the Green Bank radio telescope.

Name	Institution	E-mail	Phone	Student
Rachel Rosen	NRAO	rrosen@nrao.edu	304-456-2385	no

Remote Observing Request

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

Instrument Setup

430 G

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned