Technical Page

This proposal has not been submitted before.

Proposal Type:	Regular
General Category:	Pulsars
Observation Category:	Galactic
Total Time Requested:	35 Hours
Minimum Useful Time:	60 min

Proposal Title: Scintillation Arc Observations of PSR B1737+13

ABSTRACT:

Pulsar scintillation observations are a powerful probe of the ionized interstellar medium and an aid to highest-accuracy pulsar timing. Arecibo observations are state-of-the-art because several key observations are sensitivity-limited. Scintillation arcs, discovered at Arecibo immediately following the upgrade, yield great detail about the intervening scattering medium, but they require excellent S/N to be observable in detail. Building on previously published observations we request 20-epoch, weekly observations of the bright pulsar B1737+13, which has already yielded valuable insights. Based on that previous study, but assisted by 10 years of observational and theoretical progress on scintillation arcs, we will critically test a promising model for the formation of reverse arclets (Pen and Levin 2014). If possible, we will supplement these Arecibo multi-frequency observations with quasi-simultaneous LOFAR single-station observations to broaden the frequency coverage to a full decade.

Name	Institution	E-mail	Phone	Student
Jung Hauke	University of Bielefeld	hauke.jung@uni-bielefeld.de		G

Remote Observing Request

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

Instrument Setup

430 G L-wide 327

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

300 - 340
410 - 450
1100 - 1500

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

This proposal requires coordination with GPS L3 at 1381 MHz.