Technical Page

Proposal Type:	Regular
General Category:	Pulsars
Observation Category:	Galactic
Total Time Requested:	18 Hours
Minimum Useful Time:	8

Proposal Title: A 2–3 GHz Arecibo survey of eight globular clusters

ABSTRACT:

The scientific applications of pulsars in globular clusters are plentiful and include the first ever proof of the existence of ionized gas in globular clusters and recent evidence for the existence of high-mass neutron stars which challenge many equations of state for super-dense matter. Future discoveries expected from globular clusters include binary pairs of millisecond pulsars and pulsar–black hole binary systems. We request 18 hours to search the 2–3 GHz band for new pulsars in a sample of 8 globular clusters with Arecibo. Our proposed observations make use of the new Mock spectrometers in single-pixel mode and would be at least three times more sensitive than the recent Arecibo survey carried out by Hessels et al. Based on the detection rate of this previous survey, we estimate that as many as 80 pulsars could be detected in this sample of clusters, where 5 pulsars are currently known.

Name	Institution	E-mail	Phone	Student
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Remote Observing Request

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

Instrument Setup

S-low

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned