

Technical Page

Proposal Type: Regular
 General Category: Pulsars
 Observation Category: Galactic
 Total Time Requested: 40 Hours
 Minimum Useful Time: 20

Proposal Title: A 770-MHz Arecibo pulsar survey of 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 40 hours to search the 720-820 MHz band for new pulsars in a sample of 18 globular clusters with Arecibo. To our knowledge, four of these clusters have not been previously searched. For the remainder, our proposed observations would be typically a factor of 3 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 up to 60 pulsars could be detected in this sample of clusters, where 23 pulsars are currently known.

Name	Institution	E-mail	Phone	Student
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Remote Observing Request

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

Instrument Setup

705-825

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned