

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Pulsars
 Observation Category: Galactic
 Total Time Requested: 40.25 Hours
 Minimum Useful Time: 1 hour

Proposal Title: Searching for Millisecond and Young Pulsars in Low-Latitude Fermi Unidentified Sources

ABSTRACT:

We propose to search for pulsars in a set of unidentified sources close to the Galactic plane ($|b| < 4$ degrees) from the 7-year Fermi catalog. This will be only the second search at low Galactic latitudes since the early days of Fermi, and is an extension of our search of 12 low-latitude unidentified sources in 2015, which discovered a new binary millisecond pulsar. The proposed work is motivated by the significant improvements in Fermi event selection, source localization, and modelling of diffuse Galactic gamma-ray emission in the most recent source catalog. The benefits of potential discoveries include rare young pulsars, tests of theories of gravity via timing of binary pulsars, facilitating gravitational wave detection through expanding the set of objects included in pulsar timing arrays, studying the pulsar emission mechanism at a range of energies, and detecting high-energy relativistic shock emission from exotic binary pulsar systems.

| Name | Institution | E-mail | Phone | Student |
|--------------|-------------------------|------------------------|--------------|---------|
| Julia Deneva | George Mason University | julia.deneva@gmail.com | 607-592-5443 | no |

Remote Observing Request

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

Instrument Setup

327 ALFA

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

293 - 361

1215 - 1536

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

This proposal requires coordination with GPS L3 at 1381 MHz.