

Technical Page

Proposal Type: Regular
 General Category: Pulsars
 Observation Category: Galactic
 Total Time Requested: 7.5 Hours

Proposal Title: A Pulsar Search to Solve a 50 Year-old Mystery

ABSTRACT:

The optical and radio nebula G70.7+1.2 has been the object of scrutiny and speculation for half a century. Multiwavelength observations have repeatedly yielded unexpected results, ruling out successive models of the object's nature and the mechanisms at work within it. A recent Chandra X-ray image obtained by us suggests a new interpretation of the available facts: a hard X-ray point source near the apex of the G70.7+1.2 bow-shock structure is a young neutron star and, in all likelihood, an active radio pulsar. We propose a deep search for pulsations from this source through a total of 7.5 hours of L- and S-band observations. A successful detection will allow us to finally pin down the nature, energetics, and evolutionary history of G70.7+1.2, an object that uniquely brings into view the interactions of pulsar winds with dense interstellar matter.

Name	Institution	E-mail	Phone	Student
Zaven Arzoumanian	USRA, NASA-GSFC	zaven@milkyway.gsfc.nasa.gov	301-286-2547	no

Service Observing Request

- None
- All of the observing run.
- Part of the observing run.
- Queue Observing

Remote Observing Request

- No
- Maybe
- Yes

Instrument Setup

L-wide S-low

Atmospheric Observation Instruments:

Special Equipment or setup: 4 WAPPs

RFI Considerations

Frequency Ranges Planned