

Technical Page

This proposal has been submitted before.

The previous proposal number is P2779.

Proposal Type: Regular
 General Category: Pulsars
 Observation Category: Extragalactic
 Total Time Requested: 17 Hours
 Minimum Useful Time: 1.25 hr

Proposal Title: Low-frequency PUPPI Search for Pulsars and Transients in M33

ABSTRACT:

We propose to use the 327 MHz receiver and PUPPI backend to search for giant pulse emitting neutron stars in M33. These would be the first clear detections of extragalactic pulsars beyond the Magellanic Clouds. Pulses from Crab-like pulsars in M33 would help us understand neutron star formation, the supernova process, the M33 pulsar population, and pulsar evolution at early stages. They would also probe the poorly understood intergalactic medium and the interstellar medium of M33. Extremely luminous pulsars, rotating radio transients, magnetars emitting bright radio bursts, and other kinds of exotic bursts may also be detectable. With the PUPPI backend, every Crab-like emitter beaming toward us from the M33 optical disk should be detectable in our search, with one pulse detected from each source every 3 to 9 min of integration. Scattering, scintillation, and dispersion are not expected to be significantly detrimental in the search. Our total time request is 17 hr.

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Remote Observing Request

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

Instrument Setup

327

Atmospheric Observation Instruments:

Special Equipment or setup: PUPPI with 100 MHz bandwidth and 4096 channels in search mode.

RFI Considerations

Frequency Ranges Planned

302 - 352