

Technical Page

Proposal Type: Regular
 General Category: Pulsars
 Observation Category: Extragalactic
 Total Time Requested: 37.5 Hours

Proposal Title: An L-band (ALFA) Search for Giant Pulses from M33

ABSTRACT:

We propose to conduct a systematic search of the M33 galaxy with ALFA for potential bright giant pulses from Crab-like pulsars. We will exploit ALFA’s multibeam capability for both large instantaneous coverage as well as efficient identification and elimination of false positives that may result from sporadic radio-frequency interference (RFI). The ALFA system, with its high sensitivity and wide-bandwidth, will be capable of detecting bright giant pulses (GPs) from Crab-like pulsars in M33 (for instance, Crab GPs of peak flux densities $\geq 2 \times 10^4$ Jy are detectable with $S/N \geq 5$ at M33’s distance). In addition to important science goals that will be enabled by the potential discoveries of pulsars in the galaxy (e.g. studies of pulsar population and ISM in the galaxy, and probing the IGM), the algorithms and methodology that we develop will also be applicable to science planned with next-generation radio arrays (including the SKA), particularly searching for fast transients in the radio sky.

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Service Observing Request

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

Remote Observing Request

- No
- Maybe
- Yes

Instrument Setup

ALFA

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

1400 - 1550 MHz

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

This proposal requires coordination with GPS L3 at 1381 MHz.