

## Technical Page

Proposal Type: Regular  
 General Category: Pulsars  
 Observation Category: Extragalactic  
 Total Time Requested: 50 Hours  
 Minimum Useful Time: 1.25 hours

**Proposal Title:** An L-band Search for Giant Pulses and Radio Transients in Local Group Galaxies  
**ABSTRACT:**

We propose to conduct a search for giant pulses (GPs) from Crab-like pulsars in M33 and four dwarf spheroidal (dSph) Local Group galaxies. Using the Mock spectrometer will allow us to achieve superior sensitivity to prior extragalactic pulsar surveys at Arecibo due to its wider bandwidth and better response to radio-frequency interference (RFI) compared with older backends. For M33 observations, ALFA's multibeam capability will provide large instantaneous coverage as well as enable efficient elimination of false positives due to sporadic RFI. For observations of dSph galaxies, we will use the even wider-bandwidth L-wide receiver. Both receivers are capable of detecting GPs from Crab-like pulsars in our target galaxies. In addition to important science that will be enabled by extragalactic pulsar discoveries (studies of pulsar population and ISM in each galaxy, and probing the IGM), the algorithms that we develop will also be applicable to science planned with next-generation arrays.

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### Remote Observing Request

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

### Instrument Setup

L-wide ALFA

### Atmospheric Observation Instruments:

**Special Equipment or setup:** none

### RFI Considerations

## **Frequency Ranges Planned**

1220 - 1720 MHz

This proposal requires Iridium RFI protection at 1612 MHz between 10pm and 6am EST.

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

This proposal requires coordination with GPS L3 at 1381 MHz.