

Technical Page

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Galactic
 Total Time Requested: 16 Hours

Proposal Title: Wideband Dynamic Spectroscopy of Coherent Radio Bursts on AD Leo
ABSTRACT:

We request radio observations to form the core of our multi-wavelength observing campaign of the red dwarf flare star AD Leo. We propose to use the Arecibo observatory to obtain wideband dynamic spectroscopy of coherent radio bursts with unprecedented time resolution and sensitivity. Recent observations of AD Leo with Arecibo reveal complex structures drifting in frequency and time, and allow detailed investigation of burst properties for the first time. Such observations seem to favor plasma emission from a beam of electrons propagating through the corona. The combination of Arecibo observations with optical photometry and cm-wavelength recordings, means that we can investigate the relationship between the extreme radio bursts, which require a coherent plasma physics process, and the role of energetic particles in producing white-light flaring and higher frequency radio flares.

| Name | Institution | E-mail | Phone | Student |
|----------------|-------------|-----------------|----------------|---------|
| Rachel A Osten | NRAO | rosten@nrao.edu | (434) 296-0259 | 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

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

1350-1730

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.