

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Extragalactic
 Total Time Requested: 22 Hours
 Minimum Useful Time:

Proposal Title: Carbon Recombination Line emission from cosmological distances

ABSTRACT:

We proposal to search for CRRLs near 327 MHz with the Arecibo telescope toward a selected set of extragalactic sources. So far the only CRRL detection from an extragalactic source is toward M82. Models of carbon line formation indicate that CRRL can be observed in emission at frequencies >100 MHz and so we choose 327 MHz for our search. Further, the models show that the emission line intensity is amplified by stimulated emission. Thus a strong background radio emission is required to detect CRRLs in emission. We selected sources with flux density >2 Jy near 327 MHz. All these sources exhibit HI absorption and molecular lines were detected toward most of them. We expect to detect line from the CRRL forming region associated with the cold HI gas seen in 21cm absorption toward these sources.

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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: none

RFI Considerations

Frequency Ranges Planned