Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
General Category: Astronomy
Sub-Category: Spectroscopy
Observation Category: Extragalactic
Total Time Requested: 6 Hours
Minimum Useful Time: 1 hour

Proposal Title: The HI mass of a gamma ray burst host galaxy at z=0.0334

ABSTRACT:
We propose to use the Arecibo L-wide receiver to carry out a deep search for HI-21cm emission from the second closest known GRB host galaxy at z=0.0334, in order to measure its HI mass. While much information is available on the stellar masses, star formation rates and metallicities of GRB host galaxies, almost no information is available on their neutral gas mass and spatial structure. We have recently obtained the first detection and spatial mapping of HI-21cm emission in the closest known GRB host, measuring its HI mass and showing that the GRB progenitor star is likely to have formed due to an interaction between two HI clouds. Our proposed Arecibo observations will yield the total HI mass of the GRB host, and the relation between its HI and stellar masses. It will be used to plan follow-up mapping studies of the HI-21cm emission in the system, and future HI-21cm searches in a sample of GRBs out to z 0.25. We request 6 hours of time for the observation, including all overheads.

Name | Institution | E-mail | Phone | Student
--- | --- | --- | --- | ---
Maryam Arabsalmani | European Southern Observatory (ESO) | marabsal@eso.org | +49 89 3200 6516 | G

Remote Observing Request

☑ Observer will travel to AO
☒ Remote Observing
☐ In Absentia (instructions to operator)

Instrument Setup

L-wide

Atmospheric Observation Instruments:
Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

1371.375 - 1377.625

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