

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Continuum
 Observation Category: Extragalactic
 Total Time Requested: 100 Hours
 Minimum Useful Time: 1.25

Proposal Title: HI Outflows as a Signature of AGN Feedback: Probing the Host Galaxy ISM
ABSTRACT:

The presence of an Active Galactic Nucleus (AGN) can have an extensive effect on a host galaxy, most notably through its emission and through powerful outflows or jets that it produces. Such outflows often deposit kinetic energy into the interstellar medium of the host galaxy at sub-kpc, kpc, and 10s of kpc scales. While this can ionize the gaseous material, recently outflows of neutral hydrogen (HI) have been detected with velocities of 1000s km/s, a clear signature of being driven by the power of an AGN jet. Such outflows can be difficult to detect due to the diffuseness of the HI gas, especially in galaxies with low radio brightnesses, but the sensitivity of the Arecibo Observatory 305m makes such study possibility. We propose to search for wide HI absorption lines in a sample population of AGN-dominated galaxies with a large range in radio brightnesses to characterize their environments and the level of feedback occurring, as a function of redshift and other host properties.

Name	Institution	E-mail	Phone	Student
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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

1100-1420

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

This proposal requires coordination with GPS L3 at 1381 MHz.