Proposal Identification No.: A2049 Date Received: 2005-Feb-01_17:13:23

Technical Page

Proposal Type:	Regular
General Category:	Astronomy
Sub-Category:	Spectroscopy
Observation Category:	Extragalactic
Total Time Requested:	40 (night-time) Hours

Proposal Title: The Fate of Cooling Flow Gas: An Arecibo HI 21-cm Absorption Survey

ABSTRACT:

We propose to search for cold neutral hydrogen in the intra-cluster media of 95 rich, X-ray bright clusters of galaxies. The observations will be made with the aim of detecting absopriton features against radio-loud ($S_{1.4} > 50$mJy) sources via total-power position switched mode, or double-position switched mode for stronger sources. We will employ the WAPP to ensure that the entire infall regions of the cluster centers are covered in the velocity ranges of the spectra (i.e. $\pm 5000 \mathrm{kms}^{-1}$ around the recessional velocities of the objects). The results will be used to constrain the various cooling flow models put forth in recent years, especially after the interesting results of Chandra and XMM-Newton observations of galaxy clusters.

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Service Observing Request

- [X] None
- [ ] All of the observing run.
- [ ] Part of the observing run.
- [ ] Queue Observing

Remot e Observing Request

- [X] No
- [ ] Maybe
- [ ] Yes

Instrument Setup

L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: We will be using the WAPP as a single-feed spectrometer.

RFI Considerations

Frequency Ranges Planned

1120 - 1420 MHz

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

This proposal requires coordination with GPS L3 at 1381 MHz.