

Technical Page

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Galactic
 Total Time Requested: 20 Hours
 Minimum Useful Time: 2 hours

Proposal Title: Mapping the Cold Local Ribbon

ABSTRACT:

We have mapped a very cold local cloud using Arecibo, and we wish to extend these observations. The extant map has generated a veritable explosion of research and excitement. New distance constraints have been derived for the cloud, using the high fidelity Arecibo map paired with stellar absorption lines. The new distance $11 \text{ pc} < D < 24 \text{ pc}$ has allowed us to use the cloud to study the environment of the local ISM. Indeed we have used it to show that the standard Local Hot Bubble paradigm, in which the local cavity is filled with million degree gas, is incorrect, and that a 'hot-top' framework may be more accurate. An expansion of our map will allow us to 1) get better distance constraints to the cloud 2) expand our study of the details of the CNM and 3) get a better X-rays shadowing constraint, which will put the last nail in the coffin of the local hot bubble theory.

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

ALFA

Atmospheric Observation Instruments:

Special Equipment or setup: We will be using GALSPECT and the standard recording infrastructure for GALFA-HI. Nothing additional is required.

RFI Considerations

Frequency Ranges Planned

1370-1470