Proposal Title: The LGS 3 Field: Resolving a Possible HVC-Dwarf Spheroidal Interaction

ABSTRACT:

We have used Arecibo (A1340) to observe a previously unresolved HI cloud near LGS 3 and determined it is actually a high-velocity cloud (HVC) separate from the dwarf galaxy. The HVC is rotating, dark matter-dominated, and appears to be tidally interacting with LGS 3. This interaction is the best evidence to date for a ~1 Mpc distance to an HVC. However, the tidal features are weak and difficult to distinguish from spectral standing wave features. We request additional observations of the LGS 3 field for two purposes. First, we would like to double the signal-to-noise ratio so that we will be able to definitively model this interacting system. Second, we have developed a routine to remove the standing waves, but it requires a larger RA extent than is present in our previous observations in order to function optimally.

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Service Observing Request

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

Remote Observing Request

-       No
-       Maybe
- X       Maybe
-       Yes

Instrument Setup

- L-narrow

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned