

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Galactic
 Total Time Requested: 84 Hours
 Minimum Useful Time: 1 hour

Proposal Title: Dark Molecular Gas in the Diffuse Interstellar Medium

ABSTRACT:

Far-infrared and gamma-ray all-sky surveys show evidence for extensive 'dark gas' in the diffuse interstellar medium not traced by 21-cm HI or 3-mm CO lines. We found that the dust column density measured by Planck at 5 arcmin scales follows the HI column density measured by Arecibo with its 3 arcmin beam in the 21-cm line, except with different infrared/HI slopes in different regions. The differences between regions could be their different molecular gas content. We propose to observe the OH emission from a diffuse high-latitude cloud that has evidence for 'dark gas' in the Planck/Arecibo comparison. If the column density of molecular gas found in this experiment matches the apparent excess in the dust column density, then we can calibrate and use the Planck excess to image the diffuse molecular gas.

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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: We need the interim correlator.

RFI Considerations

Frequency Ranges Planned

1420

1665

1667

1720