

Technical Page

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Galactic
 Total Time Requested: 261.5 Hours
 Minimum Useful Time: 2.5 hr

Proposal Title: HOW DOES FLUX FREEZING WORK IN THE MULTIPHASE ISM?
ABSTRACT:

In the diffuse interstellar medium, magnetic flux-freezing rules. The diffuse gas is widely considered to have four classical phases—the Cold and Warm Neutral Media (CNM and WNM), and the Warm and Hot Ionized Media (WIM and HIM). In addition, there is a less well-recognized phase, the Warm Partially Ionized Medium (WPIM). These phases have very rough thermal pressure equality, which means that their volume densities cover a wide range, a factor of 100 at least. How does flux freezing work in the multiphase ISM? How do the field strengths and directions compare among the phases? This proposal begins an exploration of the relationship between the interstellar magnetic field in ionized media (from the Faraday rotation measure RM), in the neutral atomic medium (from Zeeman splitting of HI), and in dense molecular regions (from Zeeman splitting of OH masers).

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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: interim correlator

RFI Considerations

Frequency Ranges Planned

1410-1425

1660-1673

1608-1616

1716-1724