

## Technical Page

This proposal has not been submitted before.

Proposal Type: Regular  
 General Category: Astronomy  
 Observation Category: Galactic  
 Total Time Requested: 67.5 Hours  
 Minimum Useful Time: 1 hour

**Proposal Title:** OH Survey along GOT C+ Sightlines

*ABSTRACT:*

Growing observational evidence supports the existence of so-called "CO-dark molecular gas (DMG)", which comprises a substantial fraction of the ISM that is not completely traced by either CO or HI emission. Previous studies have showed that C+, OH and HCO+ do reliably trace the DMG even with its harsh UV environment. The relation of N(OH) and N(HCO+) is exactly 0.03 with small errorbars (Lucas and Liszt 1996). The Galactic observations of TeraHertz C+ (GOT C+), a Herschel Key Project, has surveyed 454 C+ 158um spectra toward the Galactic plane. We propose to observe OH spectra along those GOT C+ sightlines to compare the relation between N(C+) and N(OH) in tracing DMG. The proposed Arecibo OH survey will potentially help quantify DMG by establishing the relation between key oxygen and Carbon species in the intermediate extinction ISM regime.

Name	Institution	E-mail	Phone	Student
Ningyu Tang	National Astronomical Observatories, Chinese Academy of Sciences	astrotomny@gmail.com	086-18811731183	G

### 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:** none

**RFI Considerations**

**Frequency Ranges Planned**

1612

1665-1667

1720