

## Technical Page

Proposal Type: Regular  
 General Category: Astronomy  
 Sub-Category: Spectroscopy  
 Observation Category: Galactic  
 Total Time Requested: 83 Hours

**Proposal Title:** HI Zeeman Observations of Shocked Gas in Old Supernova Remnants

*ABSTRACT:*

The main purpose of this proposal is to measure the magnetic field strength in the shocked H I gas in two old supernova remnants (SNRs), IC 443 and W51C. Among SNRs with high-velocity ( $\sim 100$  km/s) shocked H I gas, these are the only two with H I 21cm emission lines strong enough for the Zeeman experiment. To our knowledge, no H I Zeeman observations have been done toward old SNRs where very strong fields are expected. Our observation might reveal the configuration and strength of the magnetic field in cold atomic gas behind the radiative shocks. For IC 443, we also want to map the distribution of the shocked H I gas. IC 443 had been observed in H I 21-cm line previously, but either the coverage or sampling was incomplete. Considering the uniqueness of IC 443 in the study of molecular cloud-SNR interactions, a complete high-resolution map that can be compared with molecular line observations is highly desirable.

Name	Institution	E-mail	Phone	Student
Bon-Chul Koo	Seoul National University	koo@astrohi.snu.ac.kr	82-2-880-6623	no

I do NOT want to do remote observing.

**Instrument Setup**

L-wide

**Atmospheric Optical Instruments:**

**Special Equipment or setup:** none

**RFI Considerations**

**Frequency Ranges Planned**