Technical Page

This proposal has not been submitted before.

Proposal Type:	Regular
General Category:	Astronomy
Sub-Category:	Spectroscopy
Observation Category:	Extragalactic
Total Time Requested:	30h Hours
Minimum Useful Time:	1h

Proposal Title: Investigating the ISM in Galaxies Hosting Supernovae from the ASAS-SN Survey

ABSTRACT:

The "All Sky Automated Survey for SuperNovae" (ASAS-SN) is an unbiased optical supernova search within the relatively-local Universe. It has discovered 369 such outbursts since Dec. 2013, plus 3 "Tidal Disruption Events" (TDEs) and many cataclysmic variables. While a number of optical studies have been made of galaxies hosting supernovae, we know of no specific study of the gas contents or total masses of these hosts. We propose 305-m telescope HI, OH and Hnα observations to provide such data for the 74 ASAS-SN supernova hosts in the Arecibo sky that presently lack HI spectra, (plus 2 TDE hosts). These spectra will be combined with existing spectroscopic data to study HI masses, velocity widths (providing Tully-Fisher z-independent distances for SN-Ia luminosity calibration), detailed line profiles, total masses for spiral galaxies, and information on interstellar molecular and ionized gas, as functions of supernova type.

Name	Institution	E-mail	Phone	Student
Christopher J Salter	Arecibo Observatory	csalter@naic.edu	787-878-2612 X281	no

Remote Observing Request

- [X] 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

1330 - 1720

This proposal requires Iridium RFI protection at 1612 MHz between 10pm and 6am EST.

This proposal requires coordination with Punta Salinas radar within the band 1222-1381 MHz..

This proposal requires coordination with GPS L3 at 1381 MHz.