

Technical Page

Proposal Type: Large
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Extragalactic
 Total Time Requested: 990 Hours

Proposal Title: ALFALFA: The Arecibo Legacy Fast ALFA Survey

ABSTRACT:

We propose to initiate the Arecibo Legacy Fast ALFA (ALFALFA) Survey, a key element of the E-ALFA Consortium science program. Conducted in a 2-pass fixed-azimuth drift mode sampling 100 MHz with 5 km/s resolution, ALFALFA will survey 7000 square degrees away from the galactic plane, including both the rich central regions of the Local Supercluster and the low density anti-Virgo region. It is specifically designed to explore the very low mass end of the HI mass function in the local universe, the nature of dwarf galaxies and high velocity clouds, the extent and origin of HI disks, and the structure and dynamics of the Local Supercluster. As a wide area legacy survey, ALFALFA will enable a broad range of correlative studies with like datasets such as SDSS, 2MASS and GALEX to quantify environmental variations in the Local and nearby superclusters such as Pisces-Perseus and A1367-Coma. Eight times more sensitive than HIPASS with 4 times the angular resolution, ALFALFA will also provide the first wide area blind survey for HI tidal remnants, low z HI absorbers and OH megamasers in the range $0.16 < z < 0.25$. Its dataset will also be used in the statistical characterization of continuum transients, and both G-ALFA and P-ALFA programs will be conducted commensally, when multiple backends are available.

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Service Observing Request

- None
- All of the observing run.
- Part of the observing run.
- Queue Observing

Remote Observing Request

- No
- Maybe
- Yes

Instrument Setup

ALFA

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

1335-1435 MHz

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

This proposal requires coordination with GPS L3 at 1381 MHz.