

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Continuum
 Observation Category: Galactic
 Total Time Requested: 120 Hours
 Minimum Useful Time: 2 hours

Proposal Title: Monitoring radio activity of a sample of M-dwarf stars

ABSTRACT:

A growing number of planets discovered around M-dwarfs has motivated new, large surveys and studies of habitability of planets in tight, tidally locked orbits around low-mass stars. One of the related concerns is that stellar activity, especially flaring, which is common in late-type stars, may prevent planetary habitability. We propose to initiate a multifrequency monitoring of a sample of M-dwarfs that are also targets of Penn State’s upcoming radial velocity survey with the near-infrared Habitable Planet Finder spectrograph. We plan to observe at L, S, and C-band frequencies and use the Mock spectrometer. As radio observations provide the most direct diagnostic of stellar flaring, our program will characterize the activity of stars with planets orbiting in their habitable zones. To design and calibrate our program, we would like to begin with a sample of five nearby dwarfs that already have extensive optical characterizations and are known to be active in this wavelength range.

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Remote Observing Request

- Observer will travel to AO
- Remote Observing
- In Absentia (instructions to operator)

Instrument Setup

L-wide C S-high

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

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

This proposal requires coordination with GPS L3 at 1381 MHz.