

## Technical Page

Proposal Type: Commensal  
 General Category: Pulsars  
 Observation Category: Extragalactic  
 Total Time Requested: 0 Hours  
 Minimum Useful Time: 0

**Proposal Title:** A Pulsar/Transients Survey Commensal with the ALFALFA Extragalactic Survey  
**ABSTRACT:**

We propose a commensal pulsar and transients survey (“PALFALFA”) that records data during pointings of the ALFALFA extragalactic, drift-scan survey, which targets HI from galaxies. Using the new Mock spectrometers with all fourteen ALFA receivers, the 300-MHz bandwidth and 14sec integrations provide a sensitivity to periodic pulsar signals a factor of two better than recent Parkes surveys, or an increase in survey volume per deg squared of 2.8. We expect to find 5 to 10 millisecond pulsars in the 2100 deg squared remaining to be surveyed by ALFALFA. The survey also targets pulsars with relativistic companions, high-velocity pulsars and fast transients of Galactic or extragalactic origin. Data will be processed both as they are obtained using a multi-node cluster at the Observatory and after the fact using a larger grid of possible dispersion measure values.

| Name           | Institution        | E-mail                   | Phone        | Student |
|----------------|--------------------|--------------------------|--------------|---------|
| James M Cordes | Cornell University | cordes@astro.cornell.edu | 607 255 0608 | no      |

### Remote Observing Request

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

### Instrument Setup

ALFA

#### Atmospheric Observation Instruments:

**Special Equipment or setup:** We need to install a small computer (two nodes) at Arecibo that can receive raw data disks written by the Mock spectrometers. Data will be processed and results sent, with modest data rates, to off-island institutions. In addition, after some reduction, the mostly raw data will be archived at Cornell University.

## RFI Considerations

### Frequency Ranges Planned