Proposal Identification No.: T1895 Date Received: 2004-Oct-06_10:17:56

# Technical Page

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| Proposal Type: | Urgent |
| General Category: | Terrestrial Aeronomy |
| Observation Category: | technique development |
| Total Time Requested: | 20 Hours |

**Proposal Title:** New World Day Technique Development Using Linear Regularization of lag Profiles

*ABSTRACT:*

This proposal is the beginning of the "practical" part of a summer student project from the past summer. We have: 1. Developed an inverse technique for decovolving ionospheric lag profiles before non-linear least squares fitting that allows pulse length biases to be completely removed (using linear regularization). 2. Developed pairs of modulated sequences for using the technique in the F region World Day program with small statistical errors 3. Simulated the entire process. We are now ready to proceed with test observations. This proposal requests the telescope time for this purpose. This work is part of a student Phd project, and also involves professors Farzad Kmalabaldi and Erhan Kudeki of the University of Illinois.



| Name | Institution | E-mail | Phone | Student |
|---|---|---|---|---|
| Michael P Sulzer | Arecibo Observatory | msulzer@naic.edu | 787 878 2612 ext 255 | no |



**Service Observing Request**

- [X] None
- [ ] All of the observing run.
- [ ] Part of the observing run.
- [ ] Queue Observing

**Remot e Observing Request**

- [X] No
- [ ] Maybe
- [ ] Yes

## Instrument Setup

430 G 430 CH receiver 430 CH radar

**Atmospheric Observation Instruments:**

**Special Equipment or setup:** The SAS datataking software needs an upgrade allowing different radar controller parameers to be used on sucessive radar pulses. This upgrade is also needed for at least two other potenial projects, one of which is also being proposed in this period.

## RFI Considerations

## Frequency Ranges Planned

429-431