Technical Page

This proposal has not been submitted before.

Proposal Type:	Urgent
General Category:	Astronomy
Observation Category:	MEO Satellites
Total Time Requested:	14 Hours
Minimum Useful Time:	1:15

Proposal Title: Arcing on GPS and other MEO satellites

ABSTRACT:

Power degradation on GPS satellites that cannot be explained by radiation effects may be caused by arc-induced contamination of the GPS solar arrays. LANL sensors on GPS satellites have detected short radio bursts, correlated with the space environment, that may have the signature of solar array arcing. Estimates of radio and optical emission from arcs on GPS satellites make it seem possible to detect the arcs from large ground-based radio and optical telescopes. In April of 2014, the Long Wavelength Array 1 at Socorro, New Mexico, was used in conjunction with the 2.3 meter optical telescope at the Magdalena Ridge Observatory for simultaneous observations to try to detect arcing, but no detections were made. This October 18-21, another coordinated observing campaign will include the 3.5 m telescope at the Starfire Optical Range at Kirtland AFB. It is desirable to also use the Arecibo Gordon Radiotelescope, at low frequencies and high time resolutions.

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Remote Observing Request

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

Instrument Setup

47 CH receiver L-wide 327

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

44-50
310-340
1150-1730