Technical Page

Proposal Type:	Regular
General Category:	Astronomy
Sub-Category:	Continuum
Observation Category:	meteoroids
Total Time Requested:	$\tilde{8}$ hrs Hours
Minimum Useful Time:	$\tilde{2}$ hrs

Proposal Title: Dual-frequency observations of lunar meteoroid-strike EMPs.

ABSTRACT:

Passive observations of the first-quarter moon at 327 MHz and S-band are proposed to search for possible ElectroMagnetic Pulses (EMPs) generated by gram-class meteoroid strikes. These EMPs are expected to be approximately 1 microsecond in duration and to occur several times per minute over the lunar surface. If detected, these EMPs would provide insight into the physics of solid-body hypervelocity impacts including how energy is partitioned among the ejecta, plasma, and radiative processes. A total of four observing periods is requested in which we will evaluate the direct and reflected (moon-bounce) interference environment at the two observing frequencies as well as search for EMPs.

Name	Institution	E-mail	Phone	Student
John D Mathews	Penn State University	JDMathews@psu.edu	814-777-5875	no

Remote Observing Request

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

Instrument Setup

S-band receiver 327

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

323 - 330
radar S-band