

Upper Atmospheric Phenomena and Satellite Drag

Craig A. McLaughlin
Department of Space Studies
University of North Dakota
Grand Forks, ND

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ATM-Aeronomy Program

- 1. Develop a series of upper atmospheric density data sets using precision orbit ephemeris (POE) data and satellite laser ranging (SLR) data.
- 2. Examine the fluctuations in atmospheric density over time scales ranging from two hours to one day and correlate these fluctuations with specific upper atmospheric phenomena.
- 3. Present research results and increase awareness of space weather at a variety of levels and to a variety of audiences, train future researchers, and improve interaction among researchers in both the aeronomy and orbital mechanics communities.

Education and Outreach Objective

- Post data sets online for access by the research community
- Train four graduate student in aeronomy and orbit determination (focus on recruiting under-represented groups)
- Develop a new course (included course learning objectives and short description)



Education and Outreach Objective

- Work with Turtle Mountain Community College
 - Collaborate to further develop the pre-engineering curriculum
 - Visit at least twice a year
 - Letter of collaboration
- Integrate subject matter of research into other classes
 - Give specific examples
- Give public presentations on space weather and related topics
 - Mentioned Cub Scouts, student groups, and colloquia

Broader Impacts

- Specifically address each area
 - Advance learning and discovery while promoting teaching, training, and learning
 - Broaden participation of under-represented groups
 - Broadly disseminate research results



Other Advice

- Take advantage of resources available at UND
 - This seminar
 - Proposal Writing Seminar
 - Department chair
 - Other faculty
- Contact your program director to discuss research and education/outreach

