# 2011 Workshop: High Speed Stream Driving of Geospace

Long title High-Speed Streams and Their Geospace-Atmosphere Consequences CEDAR-GEM Conveners Janet U. Kozyra Richard M. Thorne Description

This session addresses the impacts of high speed streams on the development of auroral activity, radiation belt enhancements, inner magnetosphere-subauroral response, and atmospheric perturbations. A particular sub-focus is to explore the changes in the geospace-atmosphere response in the recent unusual solar minimum interval due to the combination of strong and long-lasting high speed streams, the lowest average IMF and solar wind densities ever recorded at 1 AU, and the lowest solar EUV fluxes in three solar cycles, placing system responses into a backdrop of tenuous ionospheric densities and low conductivities.

#### Agenda

- Joint CEDAR-GEM Workshop: 30 June 2011, Time: Session 1 1330-1530 UT, Session 2 1600-1800 UT
- Conveners: Janet Kozyra <<u>jukozyra@umich.edu</u>> and Richard Thorne < <u>rmt@atmos.ucla.edu</u>>,

Invitation to Participate:Please come and participate in a multi-disciplinary discussion of the response of geospace and the atmosphere to high speed streams, both in general and as observed during the recent unusual solar minimum. All are welcome!

- Speakers (listed below) have been invited to introduce new findings, the questions they raise, and possible consequences in other geospace regions.
- We are very interested in information about additional features in geospace during high-speed streams. Please let the conveners know if you have 1-2

slides to present that raise new issues.

 We are hoping to take advantage of the unique environment that the joint CEDAR-GEM meeting provides to identify the signatures of related processes in different regions.

Please come and add your expertise to the mix in the joint workshop. Workshop Description:This workshop addresses the impacts of high speed streams on the development of auroral activity, radiation belt enhancements, inner magnetospheresubauroral response, and atmospheric perturbations. A particular sub-focus is to explore the changes in the geospace-atmosphere response in the recent unusual solar minimum interval due to the combination of strong and long-lasting high speed streams, the lowest average IMF and solar wind densities ever recorded at 1 AU, and the lowest solar EUV fluxes in three solar cycles, placing system responses into a backdrop of tenuous ionospheric densities and low conductivities.

# **Revised Agenda**

## 30 June 2011, Session 1

# Solar Wind - Geospace Coupling during HSS

- 1330 Robert McPherron -- Solar wind magnetosphere coupling during high speed streams, in the recent solar minimum, and in the preceding solar minimum
- 1350 Delores Knipp Poynting Flux into ionosphere as a function of solar wind drivers
- 1400 Tzu-Wei Fang lonospheric response to the 13.5 day recurrent geomagnetic activity in 1974 (previous solar cycle)
- 1410 Raluca Ilie Periodicities in the solar wind and magnetosphere during HSS

# **Radiation Belts and Ring Current during HSS**

- 1430 Joe Borovsky Radiation belts during weak high speed streams in 2006-2007
- 1450 Wen Li Chorus waves seen on THEMIS during high speed streams
- 1510 Vania Jordanova Ring current dynamics during high speed streams

#### 1530-1600 BREAK

#### 30 June 2011, Session 2

## **Geospace - Atmosphere during HSS**

- 1600 Yue Deng Joule heating and 9-day periodicity of HSS
- 1620 Jeff Thayer CIR/HSS impact on the thermosphere
- 1640 Olga Verkhoglyadova Ionospheric TEC and thermospheric emission dynamics during HSS

## **Atmosphere-Ionosphere Responses to Solar Minimum & Consequences**

- 1700 Sharon Vadas Differences in propagation and dissipation of gravity waves during SC24
- 1720 John Emmert Causes and consequences of low thermospheric densities this minimum
- 1740 Stan Solomon: Upper atmosphere and ionosphere at Solar Minimum

#### 1800 END OF SESSION

#### Justification

The topic addresses processes in the magnetosphere and the ITM region but also coupling and feedbacks between these regions. Progress requires information exchange and collaborations between discipline areas.

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