HEPPA 2009 Agenda

Tuesday, 6 October

0730 to 0830: Registration & Continental Breakfast

0830 to 0845: Welcome (Cora Randall)

0845 to 1015: *Tutorials*

- 0845-0915 **Daniel Baker**: The Earth's Radiation Belts: A Tutorial
- 0915-0945 **Janet Green**: Satellite Particle Data Explained
- 0945-1015 **Martin Friedrich**: All You Should Know About Riometers

1015 to 1045 hrs: Coffee Break

1045 to 1145 hrs: *Tutorials* (continued)

- 1045-1115 **Gabrielle Stiller**: Effects of Energetic Particle Precipitation on the Mesosphere and Stratosphere
- 1115-1145 **David Siskind**: Processes which govern the coupling between middle and upper atmospheric odd nitrogen

1145 to 1220: *Aviation Hazards*

- 1145-1205 **Peggy Shea** (Invited): Natural Radiation at Aircraft Altitudes: Facts vs. Fiction
- 1205-1220 **Christopher Mertens** (presented by **Michael Wiltberger**): NAIRAS Model Predictions of Aircraft Radiation Exposure during the Halloween 2003 Storms

1220 to 1350 hrs: Lunch

1350 to 1420: *Back to Tutorials*

- 1350-1420 **Stan Solomon**: Particle "Precipitation" in the Thermosphere/Ionosphere

1420 to 1540: *EPP effects on the Thermosphere & Ionosphere*

- 1420-1435 **Antti Kero**: Statistical comparison of particle precipitation fluxes and the D-region electron density profiles at high latitudes
- 1435-1450 **Mark Clilverd**: Global AARDDVARK Measurements of Energetic Electron Precipitation
- 1450-1505 **Michel Parrot**: HF waves observed by DEMETER above the SAA
- 1505-1525 **Marty Mlynczak** (Invited): Energetic Particle Precipitation Effects on the Energy Balance of the Thermosphere and Ionosphere
- 1525-1540 **Jeffrey Thayer**: Recurrent Geomagnetic Activity Driving a Multi-Day Response in the Thermosphere and Ionosphere

1540 to 1740: Posters and Refreshments (See poster titles on last page of agenda)

- Posters: *EPP effects on the Thermosphere & Ionosphere* (**Feng Han**, **John Hargreaves**)
- Posters: *New and Future Measurements* (**Robert Wimmer-Schweingruber**, **Richard Gattinger**)
- Posters: *Direct EPP effects on the middle and lower atmosphere* (**Alessandro Damiani**, **David Herceg**, **Gabrielle Stiller**, **Holger Winkler**, **Michael Höpfner**, **Pekka Verronen**, **Sanna Salmi**)

1740: Adjourn for the day

1800 to 2000 hrs: **Ice Breaker Reception**

Wednesday, 7 October

0730 to 0830 hrs: Registration & Continental Breakfast

0830 to 0900: *Back to Tutorials*

0830-0900 **Richard Mewaldt**: Solar and Galactic Sources of Precipitating Particles

0900 to 1035: *Precipitating Particle Sources and Particle Transport*

0900-0920 **Gang Lu** (Invited): Sources of Energetic Particles and Their Impact on the Upper Atmosphere

0920-0935 **Max Comess**: Duskside Relativistic Electron Precipitation in the SAMPEX data set from 1992-2004

0935-0950 **Jörg-Micha Jahn**: Emission of ENAs from upper-atmospheric altitudes at the geomagnetic footpoints of hot magnetospheric plasma source regions

0950-1005 **Craig Rodger**: Use of POES SEM-2 observations to examine radiation belt dynamics and energetic electron precipitation into the atmosphere

1005-1020 **Barbara Emery**: Solar Forcing of Electron and Ion Auroral Inputs

1020-1035 **Patrick Newell**: Diffuse, Monoenergetic, Broadband (wave) and Ion Aurora

1035 to 1135 hrs: Posters and Coffee (See poster titles on last page of agenda)

Posters: *Indirect EPP Effects on the Middle and Lower Atmosphere*
(**Jan Wissing, Laura Holt, Natalia Andronova, Thomas Reddmann, Ole Kvissel, Jens Kieser**)

1135 to 1235: *Direct Effects of EPP on the Middle and Lower Atmosphere*

1135-1150 **Esa Turunen**: Atmospheric signature of relativistic electron microbursts – EISCAT data archive revisited

1150-1205 **Edward Llewellyn**: Observation of Atmospheric Composition Effects in an SPE with OSIRIS on Odin

1205-1220 **Daniel Marsh**: WACCM simulations of the chemical response of the high-latitude middle atmosphere to solar proton events

1220-1235 **Marco Calisto**: Modeling the Carrington Event with the 3-D CCM SOCOL

1235 to 1405 hrs: Lunch

1405 to 1510: *Direct Effects of EPP on the Middle and Lower Atmosphere* (continued)

1405-1420 **Jan Wissing**: Variation of particle induced ionization due to different models and boundary conditions

1420-1440 **Pekka Verronen** (Invited): Production of H, OH, HNO_2, and HNO_3 by particle precipitation

1440-1455 **Nadine Wieters**: Modeled impact of atmospheric ionization by solar protons and magnetospheric electrons on upper stratospheric constituents vs. MIPAS

1455-1510 **Miriam Sinnhuber**: The contribution of electron precipitation to middle atmosphere composition

1510 to 1530: Coffee Break

1530 to 1800 hrs: *Second HEPPA Model/Measurement Workshop*
(Led by Bernd Funke & Manuel López Puertas)

1830 hrs: **HEPPA Dinner – NCAR on the Mesa** (Included in registration fee)

Thursday, 8 October

0730 to 0830 hrs: Registration & Continental Breakfast

0830 to 1005: *Indirect Effects of EPP and Atmospheric Coupling*

- 0830-0845 **Bernd Funke**: Odd nitrogen variability caused by energetic particle precipitation: What have we learned from MIPAS?
- 0845-0900 **Cora Randall**: NO_x descent in the Arctic middle atmosphere in early 2009
- 0900-0915 **Lon Hood**: Contributions of EPP-NOx and solar UV Radiation to Interannual Ozone Variations in the Polar Stratosphere
- 0915-0930 **Annika Seppälä**: Geomagnetic activity and polar surface air temperature variability
- 0930-0950 **Don Smart** (Invited): Impulsive Nitrate Deposition Events in Polar Ice – The Result of Solar Proton Events
- 0950-1005 **Charles Jackman**: Long-term Middle Atmospheric Influence of Very Large Solar Proton Events in the 1963-2004 Period

1005 to 1105: Posters and Coffee

Posters: *Any that you missed from previous poster sessions!*

1105 to 1220: *Indirect Effects of EPP and Atmospheric Coupling* (continued)

- 1105-1120 **Xiaohua Fang**: Geoeffectiveness of precipitating auroral and ring current electrons in the Earth's upper and middle atmosphere
- 1120-1135 **Thomas von Clarmann**: How important is excess vibrational energy for modelling upper atmospheric chemistry?
- 1135-1150 **Anne Smith**: WACCM simulations of the mean circulation linking the mesosphere and thermosphere
- 1150-1205 **Ruth Lieberman**: An overview of middle atmosphere tides
- 1205-1220 **Lynn Harvey**: Vertical De-coupling of the Middle Atmosphere by Broken Planetary Waves

1220 to 1350: Lunch

1350 to 1440: *New and Future Measurements*

- 1350-1405 **Manuel Lopez-Puertas**: Measurements of temperature and nitric oxide in the thermosphere from 5.3 μm emission taken by MIPAS on Envisat
- 1405-1425 **Scott Bailey** (Invited): Observing Thermospheric Nitric Oxide in the Polar Night
- 1425-1440 **Esa Turunen**: EISCAT_3D, next generation incoherent scatter facility in Northern Scandinavia

1440 to 1510: Meeting Summary by Session Chairs

1510 to 1540: Coffee Break

1540 to 1700: Discussion and meeting wrap-up

1700: Adjourn

Tuesday Posters, 1540 to 1740

EPP effects on the Thermosphere & Ionosphere

Feng Han: Midlatitude nighttime D region variability detected by broadband VLF sferics
John Hargreaves: Observations of trapped and precipitating electrons in the auroral zone, and related effects in the D-region

New and Future Measurements

Robert Wimmer-Schweingruber: Cosmic Rays in the Martian Atmosphere and Implications for the Habitability of Mars
Richard Gattinger: Comparison of OSIRIS derived NO concentrations with coincident ACE-FTS NO measurements in the Antarctic winter upper mesosphere

Direct EPP effects on the middle and lower atmosphere

Alessandro Damiani: Atmospheric impact of SEP events during the last years of solar cycle 23 highlighted by MLS OH radicals
David Herceg: Case studies of the 2005 Solar Proton Events: Observations from GOES, SORCE, Aura-MLS, and ACE-FTS
Gabrielle Stiller: MIPAS-observations and model results for H2O2 with focus on the SPEs 2003 and 2005
Holger Winkler: Chlorine activation due to solar proton events
Michael Höpfner: Bromine nitrate ($BrONO_2$) enhancements in the middle stratosphere
Pekka Verronen: Concentration of mesospheric odd hydrogen as a proxy for energetic electron precipitation
Sanna Salmi: 3-D modelling of solar proton events with chemistry and transport model FinROS

Wednesday Posters, 1035 to 1135

Indirect EPP Effects on the Middle and Lower Atmosphere

Jan Wissing: Modeling low-energy electron precipitation effects: Consequences of a strengthened Brewer-Dobson-Circulation and polar surface temperature variability
Laura Holt: Energetic particle precipitation effects on the Northern Hemisphere stratosphere observed by LIMS
Natalia Andronova: Investigating Possible Effects of the Auroral Relative Electron Precipitation on the Stratosphere
Thomas Reddmann: Modelling solar induced disturbed stratospheric Chemistry for the period 2002 - 2005
Ole Kvissel: Modelling the impact of energetic particle precipitation on stratospheric nitric acid enhancements using WACCM
Jens Kieser: The influence of precipitating solar and magnetospheric particles on the entire atmosphere - Simulations with HAMMONIA