

**First Circular – Workshop of the International Space Science Institute (ISSI)
16 October 2006**

Comparative Planetary Aeronomy

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Date: 25 - 29 June 2007

Objectives of the Workshop:

- Comparative studies of processes and systems aspects that control the general behaviour and structure of the upper atmospheres, ionospheres and exospheres of solar system bodies (terrestrial planets, giant planets, and their moons)
- Similarities and differences of the relevant physics, chemistry, and dynamics
- Implications for long-term evolution of atmospheres and for exoplanets

Structure and programme outline: The topics to be covered during the Workshop will include the following:

- i) Introduction to comparative aeronomy: “explore” the word aeronomy & aim of the workshop and describe and use terrestrial aeronomy and its key processes as a template.
- ii) Chemical Processes: Reaction rates; cross sections; hot atom generation, etc.
- iii) Physical Processes: Solar irradiance, energy deposition, energy transport, transport equations, etc.
- iv) Modeling Approaches: 1D vs 3D, fluid, kinetic, MHD, hybrid;
- v) Thermospheres: Venus, Earth, Mars, Jupiter, Saturn, moons, comets
- vi) Ionospheres: Venus, Earth, Mars, Jupiter, Saturn, moons, comets
- vii) The interaction of fast plasma flows with ionosphere/atmosphere systems: Venus, Mars, Galilean Satellites, Titan, comets.

viii) Atmospheric Escape and Long-term Evolution: Relative importance of chemical, thermal- and plasma-induced escape mechanisms and long-term consequences. Role of intrinsic magnetic field. Effect of intensity of dipole.

ix) "Relation" between our understanding of the solar system and exoplanets.

x) General Similarities and Differences: Summary and synthesis of presentations and discussions during the workshop

Product: Following the Workshop, its output will be published as a volume in the Space Science Series of ISSI by Springer, in parallel with publication of the papers in Space Science Reviews. It is expected that a total of about 15 review style and quality papers, submitted to the usual refereeing process will be published in the book. Papers will be based on the talks at the Workshop, and will be moderated by the discussions that will take place there.

Attendance: by invitation only, ~40 participants maximum.

Funding: ISSI will provide the subsistence costs (hotel and meals) to all participants, but not the travel costs.

Schedule:

Invitations and First Circular:	16 October 2006
Registration deadline:	15 January 2007
Second Circular:	31 March 2007
Hotel booking deadline:	1 June 2007
Third, Final Circular:	1 June 2007
Workshop:	25 - 29 June 2007

List of invited participants:

See attached.

Registration – Workshop of the International Space Science Institute (ISSI)

Comparative Planetary Aeronomy

Bern, Switzerland, 25-29 June 2007

I accept the invitation to this workshop and am willing to contribute in a timely manner to the corresponding publication

Last Name:.....

First Name:.....

Affiliation:.....

Address:.....

City:.....

Country:.....

Tel:.....

Fax:.....

Email:.....

Comments:

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Deadline for Registration: 15 January 2007