

First Circular – Workshop of the International Space Science Institute (ISSI)

15 March 2013

Plasma Sources of Solar System Magnetospheres

Date: 23 -27 September 2013

Conveners

Michel Blanc	(IRAP, Toulouse, France)
Emma Bunce	(Dept. of Physics and Astronomy, Leicester, University, UK)
Rick Chappell	(Vanderbilt University, USA)
Andrew Nagy	(Univ. Michigan, USA)
Hermann Opgenoorth	(Swedish Institute of Space Physics, Uppsala, Sweden)
James Slavin	(Univ. of Michigan, USA)

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Objectives of the Workshop:

The Workshop is designed to review in depth our present state of knowledge concerning the major source processes for the plasma populations, which we find in the magnetospheres of planets with intrinsic dynamo fields throughout the solar system, from Mercury to Earth and further out to the giant planets. The main goal of the proposed ISSI Workshop is to discuss for each planet the primary plasma sources, like planetary ionospheres (surface in case of Mercury), moons and rings, plus plasma entry from the solar wind. Further discussions will deal with major acceleration processes and sinks, which are relevant to explain the final magnetospheric plasma populations in terms of composition and energy distribution. Finally the workshop will try to address common processes, which may be universal to solar system magnetospheres.

Following discussions by the Conveners, it is proposed that the Workshop will cover the following main themes:

Introduction

Historical perspective of plasma populations at Earth: A. Nagy or R. Chappell

1. Mercury
2. Earth
3. Jupiter
4. Saturn
5. Uranus and Neptune
6. Universal processes in solar system magnetospheres

Invited presentations by those attending will be structured around the above headings. This list could, subject to discussion and assessment at the Workshop, become the set of chapter headings for the ISSI book. All of those attending will be expected to contribute to one or more of the chapters or to the discussions during the talks.

Product

An important outcome of the workshop will be a book published in the Space Sciences Series of ISSI by Springer Verlag (see www.issibern.ch/publications). This volume is NOT intended to be the proceedings of the Workshop, but a collection of in-depth papers informed by the contributions and discussions at the Workshop. It should provide a coherent picture of the current state of the subject. All papers will be peer reviewed. The papers will be published both in the hardcover book in this series and also individually in Space Science Reviews as they are received. We expect the papers will be submitted within 3-4 months of the workshop so they can reflect the discussions during it. The journal issue and the SSSI volume are expected to appear about 12 months after the workshop.

Advice to Speakers

The conveners would like to remind the speakers that ISSI workshops differ in many ways from other, larger gatherings called "workshop". The guiding spirit of the ISSI workshops is interaction between the attendees who are representing, in this case, all aspects of the Physics of Plasma Sources of Solar System Magnetospheres. The resulting multi-author book-chapters should provide a broad view of the current status of this important discipline but, the Workshop should also discuss the future directions of the subject – what can we learn from one planet to understand the others and what we are seeking to achieve in the future. The latter aspect includes new missions, new instrumentation and observing methodologies, new analysis techniques and the development of theory. With this in mind, presenters are encouraged to spend a fraction of their talks in addressing future directions and challenges and the barriers that need to be overcome. We anticipate that the extended discussion sessions will seek to emphasise also these aspects.

Location

The Workshop will be held at the International Space Science Institute, Hallerstrasse 6, 3012 Bern, Switzerland.

Attendance

Attendance is by invitation only.

Young scientists

Under its special program for supporting young scientists, ISSI will invite five early

career scientists, within two years of their PhD, to take full part in the Workshop. ISSI will cover the subsistence costs (hotel and meals) to the invited young scientists.

Funding

ISSI will provide the subsistence costs (hotel and a per diem to cover meals) to all participants but not the travel costs. There will be no registration fee for the Workshop.

Travelling to Bern

Bern can be reached easily from two international airports: [Zurich \(ZRH\)](#) and [Geneva \(GVA\)](#). Direct intercity trains to Bern depart every half hour from inside the airport buildings; see www.rail.ch for detailed departure times. The travel time is ~1.5 hours from Zurich airport and ~2 hours from Geneva airport.

There is also a local airport (Bern, BRN <http://www.flughafenbern.ch/>), located a 20 minute shuttle ride from the city centre, with direct connections to Munich, Berlin Schönefeld, Hamburg, Amsterdam, London City, Vienna and Paris Orly.

Bern is connected to many European cities by fast intercity trains (e.g. TGV Paris-Bern in 4.5 hours, or Frankfurt-Bern 5 hours). Timetable information of trains within and around Switzerland can be found at www.rail.ch. Also check out our website www.issibern.ch/ for a few more travel tips such as links to city maps of Bern, weather forecasts, tourist information etc...

Hotel reservations

A block booking has been made in city centre hotels for the Workshop. All participants at the workshop are requested to contact the workshop secretary, Jennifer Zaugg (Tel. +41-31-631-4896, Fax: +41-31-631-4897, email: Jennifer.Zaugg@issibern.ch), to indicate their arrival and departure dates and times, as well as any special requests they may have (e.g. double room). Please note that all hotel reservations have to be made by the ISSI Secretariat. A confirmation will be returned within a few days; please see <http://www.issibern.ch/localguide/location.html> for maps that indicate the location of ISSI and of the hotels (go to “hotels”, and near the bottom of the page “map of hotels”).

Schedule

Invitations and First Circular:	15 March 2013
Registration deadline:	17 May 2013
Second Circular and final program:	16 August 2013
Workshop:	23–27 September 2013