



2009 SORCE Science Meeting – *The Impact of Solar Variability on Earth* July 19-29 ☀ Montreal, Canada

**Registration Deadline:
May 31, 2009**

Hotel Deadline: June 17, 2009

The 2009 SORCE Science Meeting will be held in conjunction with the IAMAS 2009 Meeting in Montreal, Canada, July 19-29. There will be a special 2-day SORCE-related session (M03) called *“The Impact of Solar Variability on Earth”* on Monday-Tuesday, July 27-28.

The session will address all aspects of the impact of solar variations on the Earth’s atmosphere and oceans. These include:

- Variability of the solar irradiance (TSI and SSI measurements and modelling)
- Variability of energetic particle precipitation
- Solar signal in the thermosphere, mesosphere, and stratosphere (observations, modelling, mechanisms)
- Solar signal in the troposphere (observations and modelling, processes, climate relevance)
- Solar signal in the oceans and the role of atmosphere-ocean coupling
- Solar impact on centennial to millennial timescales



The symposium invited contributions (abstracts deadline was Jan. 23) on identifying the solar signal from ground-based and satellite observational datasets ranging from the upper atmosphere (thermosphere, mesosphere) to the troposphere, the Earth’s surface and the oceans. Papers on the solar irradiance and particle flux on Earth were encouraged as well as contributions on physical and chemical processes and mechanisms leading to the observed solar signal, and especially simulations with mechanistic, general circulation and chemistry climate models. Studies could include solar variations on different time scales ranging from the 27-day rotation period over the 11-year solar



cycle to centennial and millennial variations including the Maunder Minimum.

The overall MOCA-09 program is now available, listing the days and times for each symposium at: <http://www.moca-09.org/e/documents/Program-framework-April.pdf>. A detailed program listing exact days and times for each presentation will be posted on the MOCA-09 site in the coming weeks.

Session M03 **invited speakers** who have accepted and their tentative talk title/subject are (alphabetically, as of April 15):

- Ulrich Cubasch, Freie Universität Berlin, Germany
Solar Impact on Earth’s Climate at Centennial and Millennial Timescales
- Wolfgang Finsterle, PMOD/World Radiation Center, Davos, Switzerland
The TSI measurements of PMOD/WRC
- Bernd Funke, Instituto de Astrofísica de Andalucía, Granada, Spain
Odd Nitrogen Variability Caused by Energetic Particle Precipitation: What Have We Learned from MIPAS?
- Lesley Gray, Reading University, UK
The 11-Year Solar Cycle in the Stratosphere
- Kunihiko Kodera, Meteorological Research Inst., Tsukuba, Japan

Conceptual Model for the Solar Influence from the Stratosphere

- Greg Kopp, LASP, Univ. of Colorado, Boulder
Total Solar Irradiance Measurements from the Total Irradiance Monitor
- Katja Matthes, Freie Universität Berlin, Germany
Solar-QBO Interactions in the Middle Atmosphere: An Overview
- Raimund Muscheler, Lund University, Sweden
Reconstructing Solar Variability with Cosmogenic Radionuclides and the Sun-Climate Link on Centennial to Millennial Time Scales
- David Rind, NASA GISS, New York, NY
The Role of SSTs for the Decadal Atmospheric Solar Signal in Model Studies
- Hauke Schmidt, Max Planck Inst. for Meteorology, Hamburg, Germany
Solar Signal in Temperature and Chemistry of the Mesosphere and Lower Thermosphere
- Kirill Semeniuk, York Univ., Toronto, Canada
Impact of Ionizing Particle Precipitation on the Middle Atmosphere
- Gerard Thuillier, Service d'Aéronomie du CNRS, France
The Solar Spectrum: Methods of Measurements Calibration, and Recent Results
- Yvonne Unruh, Imperial College, London, UK
Solar Spectral Irradiance Modeling: Rotational to Solar-cycle Timescales
- Warren White, Univ. of California at San Diego, Scripps Inst. of Oceanography, La Jolla
Non-Linear Alignment of El Niño to the 11-Year Solar Cycle in Observations and Models

Session M03 **contributed talks/posters** (alphabetically, as of April 15) are:

Sergei Avakyan	Sabri Mekaoui
Will Ball	Joseph Paganan
Chiara Cagnazzo	Jing Pan
Robert Cahalan	Peter Pilewskie
Sebastian Dikty	Erik Richard
Suvarna Fadnavis	Susanne Rohs
Vitali Fioletov	Indrani Roy
Claus Fröhlich	Semjon Schimanke
Jerry Harder	Werner Schmutz
Libor Hejkrlik	Marty Snow
Lon Hood	Friedhelm Steinhilber
Radan Huth	Oran R. White
Alexei Krivolutsky	Tom Woods
Anne Kubin	Dong Wu
Jae Lee	Tiangui Xiao
Doug Lindholm	Fangqun Yu
Hua Lu	

Session conveners are Ulrike Langematz (Freie Universität Berlin, Germany), Victor Fomichev (York University, Toronto, Ontario, Canada), Joanna Haigh (Imperial College, London, UK), Lon Hood (Univ. of Arizona, Tucson), Alexei Krivolutsky, Werner Schmutz (PMOD/World Radiation Center, Davos, Switzerland), and Tom Woods (LASP, Univ. of Colorado, Boulder).

Following Monday's M03 session, July 27, there will be a group science dinner at a restaurant near the Convention Center for anyone interested. Attendees will be on their own for the dinner expense. More details coming, and pre-registration will most likely *not* be required.

For general IAMAS 2009 Meeting information and science program, visit:

<http://iamas-iapso-iacs-2009-montreal.ca/index.asp>.

The *SORCE*-related session is IAMAS session M03.

We hope that you will join us!



SORCE Team Attends Freiburg ESA EUV-IR Validation Workshop –

The *ESA (European Space Agency) Solar EUV-IR Validation Workshop* was April 15-17, in Freiburg, Germany at the Fraunhofer Institute for Physical Measurement (IPM) Techniques. This gathering of almost 35 international solar scientists is an important part of all solar irradiance programs because it provides validation of our measurements made in 2008 from the TIMED and *SORCE* satellites and from a rocket flight with the prototype *SDO* EVE instrument.

Attending on behalf of *SORCE* was PI Tom Woods (XPS), Jerry Harder and Margit Haberreiter (SIM and SRPM), Marty Snow and Bill McClintock (SOLSTICE),



and Greg Kopp (TIM). The workshop attendees discussed solar science results in the EUV, UV, Visible, NIR, and TSI. Another important focus of this workshop was to compare measurements from the three SOLAR instruments on the International Space Station with the LASP instrument measurements. Collaborating with the international community to cross-validate solar irradiance measurements is imperative for maintaining long-term records.

The workshop topics included:

- Calibration discussion on space instrumentation and validation
- WHI Solar Irradiance Spectra (SIRS) from the April 2008 campaign and development of an irradiance data base for solar minimum conditions
- Development of an irradiance data base for solar active minimum conditions
- TSI measurements and analysis
- Modeling of the solar spectral irradiance
- Irradiance indices for solar and solar-terrestrial relation modeling and their applications
- Solar variability in the transition region as a function of temperature to be derived by intercomparisons of data

Following the workshop, Tom Woods, Jerry Harder, Greg Kopp, and Margit Haberreiter continued on to Vienna, Austria, to attend the *European Geosciences Union (EGU) General Assembly*, April 19-24. This meeting provided an opportunity for the *SORCE* team to communicate their research results to a broader international community. It was also a chance to promote collaborations with the other solar, climate, and space weather communities.



Of particular interest during the EGU Meeting were several compelling talks about observations showing that the solar cycle 23 minimum is lower than the cycle 22 minimum. We hope to follow-up with additional discussions on this topic at the 2009 *SORCE* gathering in Montreal in July (Session M03 at IAMAS, see page 1). It is expected that this topic will be of even more interest in the future when there is more data to analyze – an excellent topic for the 2010 *SORCE* Science Team Meeting.

993,447

Hits to the *SORCE* Website

(Since 4/21/03, As of 4/24/09)

NASA ESD Sr. Review Panel Meeting May 13 –

Three members of the *SORCE* Team will stand before the NASA Earth Science Division (ESD) Sr. Review Panel on May 13 to discuss *SORCE*'s Extended Mission. The NASA ESD of the Science Mission Directorate (SMD) is supporting 13 Earth observing missions that are, or soon will



be, operating beyond their prime mission lifetimes. Since extended operations and associated data production activities require a significant fraction of the ESD annual budget, NASA periodically evaluates the allocation of funds with the aim of maximizing the missions' contributions.

The *SORCE* team submitted the *SORCE* Extended Mission Proposal for 2010-2013 in March, and the presentation to the Sr. Review Panel is a follow-up opportunity for them to ask questions so they really understand the *SORCE* extended mission plans and goals. All NASA Earth Science Missions were required to submit a proposal that included scientific productivity, contribution to national objectives, technical status, and budget efficiency. This evaluation process is known as the "Senior Review". *SORCE* Principal Investigator Tom Woods, will attend this panel review, along with Tom Sparn, *LASP* *SORCE* Project Manager; Ed Chang, NASA *SORCE* Project Manager; and Robert Cahalan, NASA *SORCE* Project Scientist.

Upcoming Meetings / Talks –

SORCE scientists plan to present papers or attend the following 2009 meetings:

- ESA Solar EUV-IR Validation Workshop, April 15-17, Freiberg, Germany
- EGU General Assembly, April 19-24, Vienna, Austria
- Space Weather Workshop, April 28-May 1, Boulder, Colorado
- ISSI Working Group – Cross-calibration of past FUV Experiments, May 25-28, Bern Switzerland
- AAS/Solar Physics Division Meeting, June 14-18, Boulder, Colorado
- IAMAS/APSO – *SORCE* Meeting, July 19-29, Montreal, Canada
- SOHO-23: Understanding a Peculiar Solar Minimum, Sept. 21-25, Northeast Harbor, Maine

To submit information to this newsletter, please contact: vanessa.george@lasp.colorado.edu.