SNS • SORCE News Source

Solar Radiation and Climate Experiment Monthly Newsletter **Nov. – Dec. 2015**

2015 Sun-Climate Symposium –

A great success! Over 80 scientists and students from around the world gathered to present their findings on solar irradiance variability and climate change and engage in spirited discussions.

This Sun-Climate Symposium, November 10-13, in Savannah, Georgia, was organized by the Sun-Climate Research Center – a collaboration between NASA GSFC and LASP at the University of Colorado. This conference ***"Multi-Decadal Variability in Sun and Earth during the Space Era"*** contained eight sessions that covered solar irradiance measurements and modeling, solar influences on Earth's atmosphere and climate, variability observed in Sun-like stars, and climate changes and its impact on society. Sessions included:

1. Total Solar Irradiance Measurements and Modeling
2. Sun-Climate Connection: Top-down and bottom-up couplings
3. Climate Changes during the Space Era
4. Solar Spectral Irradiance Measurements and Modeling
5. Societal Impacts from Climate Change and Solar Variability
6. Variability of the Sun-like Stars
7. Challenges and Opportunities in Solar Observations
8. Next Generation Observing Systems for Climate Records

Alexander Marshak, NASA GSFC, presented "Looking at the Entire Sunlit Earth from the L1 Point." Photo by Rich Stolarski.

For a more detailed symposium summary, please visit the website: http://lasp.colorado.edu/home/sorce/news-events/meetings/2015-sun-climate-symposium/. There you will also find many of the presentations posted under Science Program Speakers (tiny url: http://tinyurl.com/qjfx6zh) and Poster Session.

And a few fun photos from this great week…
(Photos taken by Marty Snow)

The Savannah River is the shipping channel for the Port of Savannah, one of the nation's busiest ports for oceangoing container ships. The Georgia Queen riverboat is in the foreground. Photo by Ken Tapping.

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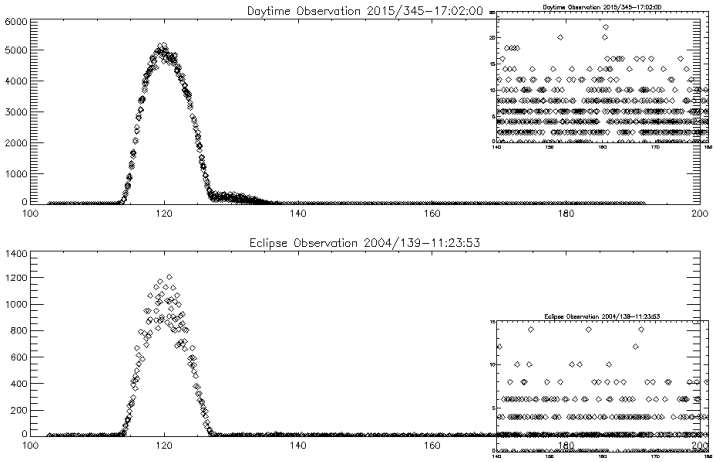
airglow is much brighter on the dayside (about 5 times brighter).

The plan is to take the first stellar measurements in January 2016 during the next short eclipse season. SOLSTICE uses stellar measurements to determine the instrument degradation corrections, so these measurements are critical for the long term accuracy of SORCE ultraviolet observations.



The smaller inset plots are the range of 140 nm to 180 nm. The average count rate for the daylight observation is 5.2 DN/s, while a randomly chosen observation from 2004 during eclipse had an average of 2.6 DN/s. The large peak near 121.6 nm is due to geocoronal hydrogen emission. Additional analysis and observations will be needed to determine if the slightly elevated background is due to scattered sunlight or due to instrument aging.

2016 EGU General Assembly –

We are pleased to announce the following SORCE-related session at the EGU General Assembly 2016, 17-22 April 2016, Vienna, Austria: **ST4.6/CL2.05 – *Solar Irradiance Variability and its Effects on Climate.*** The session link is: http://meetingorganizer.copernicus.org/EGU2016/session/20699.

Variability of the incoming solar irradiance and its effects on climate have received wide attention over the recent years. There is a continuous effort to reduce uncertainties in measurements of the total and spectral solar spectral irradiances, physical and empirical modelling have undergone considerable progress and novel statistical analyses have been employed. At the same time, numerical models and observations are extensively used to characterize the influence of the solar irradiance variability on climate.

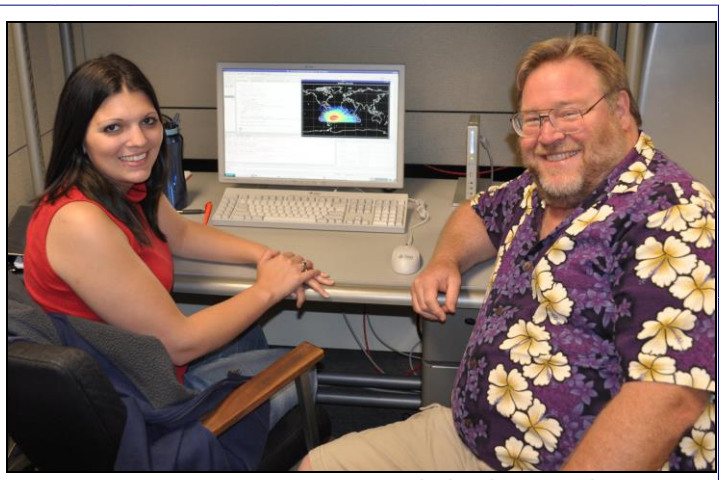
Successful Offpoint Testing for Stellar Observations –

By Marty Snow – LASP, University of Colorado

On Friday, Dec. 11, 2015, SORCE was pointed 24 degrees off the Sun to test if stellar observations would be possible in DO-Op (Day Only Operations) mode. It was a success. All SOLSTICE mechanisms worked and all commands were accepted. Below are some quick plots of the data taken during the experiment. As expected, the

This session invites abstracts on measurements and models of solar spectral and total irradiance as well as abstracts on the atmospheric response to solar irradiance variability. Abstracts on comparison of atmospheric effects to different solar irradiance datasets are particularly welcome.

The EGU assembly website for general information is: http://egu2016.eu/home.html. And please consider submitting your abstract using the following link: http://meetingorganizer.copernicus.org/EGU2016/abstractsubmission/20699. The abstract deadline is January 13, 2016 (13:00 CET). The session conveners – Marty Snow, Klairie Tourpali, and Stergios Misios – look forward to seeing you in Vienna in 2016!



SORCE SOLSTICE scientist Marty Snow worked with REU student Laura O'Connor from the University of Michigan during the summer of 2011.

SORCE Wants REU Students –

By Marty Snow, LASP, Univ. of Colorado

Each summer, the SORCE mission funds student research projects as part of the University of Colorado's Research Experience for Undergraduates (REU) program. For eight weeks, the students come to Boulder, Colorado to work with SORCE scientists on a research project involving measurements from SORCE. The program pays for the students' travel costs and housing, plus a $500/week stipend.

They begin their time at LASP with a lectures series on Solar and Space Physics from experts in the field, and end with a student symposium where the REU students present their findings. Last year, three students worked on a diverse set of projects using SORCE data. This included comparison of Magnesium II (Mg II) datasets using wavelets to extract instrument artifacts, analysis of Mg II images from the Interface Region Imaging Spectrograph (IRIS) compared to SOLSTICE irradiance measurements, and comparison of Ca II images from the PSPT to SIM irradiance time series.

This year's projects will be just as interesting! Applications for the 2016 program are now being accepted, and we invite students from around the country to apply for a position to work on SORCE and other missions. We depend on professional scientists interested in SORCE science to recommend well qualified students to our program. Full details are available at http://lasp.colorado.edu/reu including all deadlines (application deadline is Feb. 1). For further information, feel free to contact the REU Program Organizer, Marty Snow (snow@lasp.colorado.edu or 303-885-8689).

Upcoming Meetings / Talks –

SORCE scientists will present papers or attend the following 2015-2016 meetings/workshops:

AGU Fall Meeting, Dec. 14-18, San Francisco, CA
ISSI Team "Solar Heliospheric Lyman Alpha Profile Effects (SHAPE)", January 2016, Bern, Switzerland
Space Climate 6 School and Symposium, March 30 – April 7, Levi, Finland
European Geosciences Union (EGU) General Assembly, April 17-22, Vienna, Austria