

HAO Colloquium Series

(Refreshments served)

Speaker: Greg Kopp, LASP
Time: 1:30–2:30 pm
Date: Wednesday, December 18, 2013
Location: CG1 – 1210 South Auditorium (also webcast at <http://www.fin.ucar.edu/it/mms/cg-live.htm>)
Title: Solar Irradiances - Continued with a New Mission

Abstract:

LASP's SORCE mission has acquired solar irradiance measurements for Earth climate research from the time of its launch in early 2003 until mid-2013. These results improved on prior measurements for their better accuracies and stabilities as well as for their continuity. The higher cadence irradiance measurements have been useful for discerning solar activity types causing changes in the Sun's radiant energy output, while the long-term variability helps understand solar influences on Earth climate.

Continuity of these measurements is needed on time scales of decades to centuries. With current irradiance-monitoring spacecraft all well beyond their intended mission lifetimes, future U.S. measurements are planned by instruments on a series of climate-oriented TSIS instruments. We have just completed the build and calibrations of the first of these, intended for launch in 2017, and are looking forward to the solar data record improvements that they provide. But 2017 is a ways off, necessitating the recent launch of the intervening Total Solar Irradiance Continuity Transfer Experiment (TCTE) to continue the existing total solar irradiance measurement record started in 1978. This mission was done much as others should be: It was assembled quickly and inexpensively (as spacecraft instruments go) thanks to an enthusiastic team of professionals and students working together.

I will give an overview of the SORCE mission's highlights and its current status, discuss the future plans for keeping these measurements going, and present the commissioning state of the recently launched TCTE.