



## HAO Colloquium Series

(Refreshments served)

**Speaker:** Marty Snow, LASP, University of Colorado

**Time:** 1:30–2:30 pm

**Date:** Wednesday, November 30, 2011

**Location:** CG1-South Auditorium

**Title:** Solar Magnesium II Index: The Long and Short of It

### **Abstract:**

The Magnesium II core-to-wing ratio has been measured on a daily basis since 1978 by a wide variety of instruments. This ratio (also known as the Mg II index) is an important proxy for solar chromospheric activity, not only because it is highly correlated with chromospheric emission at other wavelengths, but also because the measurement is relatively insensitive to instrument artifacts over long time scales. With proper care, a single composite dataset can be assembled to produce an accurate proxy for solar activity for the last 30+ years. I will discuss some of the recent work in combining the wealth of MgII index datasets into a single consistent composite.

Early Mg II index datasets are at relatively low spectral resolution and time cadence, but more recent measurements from the SOLar-STellar Irradiance Comparison Experiment (SOLSTICE) on the Solar Radiation Climate Experiment (SORCE) are at much higher spectral resolution and can therefore detect solar variability on much shorter time scales, including observations of flares. I will also describe the next generation of instrument to measure the Mg II index. The Extreme UltraViolet Sensor (EUVS) channel C on the EUV and X-ray Irradiance Sensor (EXIS) will make a high-precision observation of the Mg II index every 9 seconds. The measurement will not only contribute to the EUVS solar spectral model, but will also be used to track the degradation of the A and B channels.