HAO Colloquium Series

(Refreshments served)

Speaker: **Jan Stenflo, Institute of Astronomy, Zurich**

Time: **1:30–2:30 pm**

Date: **Wednesday, April 4, 2012**

Location: **CG1-Rm 2126**

Title: **Bipolar magnetic regions on the Sun**

Abstract:

The magnetic flux that is generated by dynamo processes inside the Sun emerges in the form of bipolar magnetic regions. The properties of these directly observable signatures of the dynamo can be extracted from full-disk solar magnetograms. The most homogeneous, high-quality synoptic data set of solar magnetograms has been obtained with the MDI instrument on the SOHO spacecraft during 1995-2011. We have developed an IDL program which has, when applied to the 73,838 magnetograms of the MDI data set, automatically identified 160,079 bipolar magnetic regions that span a range of scale sizes across nearly four orders of magnitude. The properties of each region have been extracted and statistically analyzed, in particular with respect to the polarity orientations of the bipolar regions, including their tilt angle distributions and their violations of Hale's polarity law. The talk will present the results of this analysis.