HAO Colloquium Series

(Refreshments served)

Speaker: **BC Low, HAO/NCAR**

Time: **3:00–4:00 pm**

Date: **Wednesday, June 13, 2012**

Location: **CG1-2126**

Title: **The restless interior of quiescent prominences**

Abstract:

This talk is concerned with the high-latitude quiescent prominences, the so-called polar-crown variety. Despite its macroscopic stability well before eruption as a part of a CME, the interior of such a prominence typically is constantly dynamic on the small scales down to the limits of spatial and temporal resolutions, as revealed by Hinode/SOT and SDO/AIA. Vertical thin threads of cool plasma systematically descend agitatedly amidst equally-narrow, upward, turbulent streams of hot, tenuous plasmas. Yet the spectral polarimetric observations suggest that the cool plasma embeds a largely horizontal magnetic field, rather troubling with the high degree of frozen-in condition expected of that MHD environment. I will report on two theoretical developments that propose a resistive origin for this phenomenon. The calculations are too detailed to be presented but can be described in elementary terms of how a high degree of frozen-in condition in nonlinear MHD can bring about circumstances under which that condition breaks down.