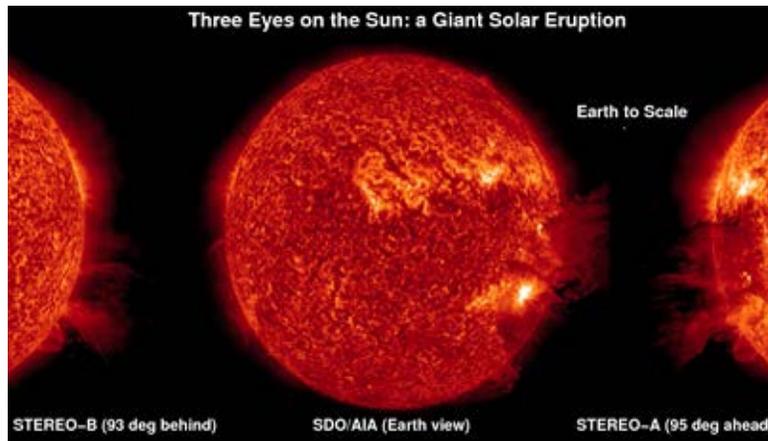


# P/SS Department Colloquium

## The Dynamic Sun:

### A Plasma Laboratory and Cradle of Space-weather Driving Eruptions



The Sun is our parent star situated at the heart of the heliosphere and solar system. Its outer atmosphere, the solar corona, is permeated with a million-degree hot, magnetized plasma. It serves as a unique laboratory for the mankind to probe similar physics governing plasmas elsewhere in the universe. It also spawns powerful eruptions that influence the so-called space weather, for which our forecast capabilities are still rudimentary. In this talk, I will present recent advances in space observations and numerical models of various dynamic phenomena occurring in the solar corona, such as (1) solar flares, which are natural particle accelerators, (2) mass-ejection associated coronal waves, which can transport energy and are useful diagnostic tools, (3) solar prominences, which are cool condensations formed by a radiative cooling instability within the hot corona, and (4) Sun-grazing comets, which can be used as solar probes. I will discuss implications of these advances in broad space physics, planetary, and astrophysical contexts, as well as prospects in the advent of future space missions.

Friday, April 24, 2015

Meet and Greet

3:15—3:45PM

OPS Room 144

Colloquium

4:00 – 5:00PM

OPS Room 140

Lite refreshments will be provided



Dr. Wei Liu is a researcher of Stanford University stationed at the Lockheed Martin Solar and Astrophysics Laboratory in Palo Alto, CA. He received a B.S. and M.S. in space physics from the University of Science and Technology of China and a Ph.D. in physics from Stanford University. He was a NASA Postdoctoral Program Fellow at the Goddard Space Flight Center. Dr. Liu's research focuses on magnetized plasmas in the solar atmosphere and their associated activity that affects weather in space and life on Earth. He employs a wide range of methods to analyze space-mission data and develops models to probe their underlying physics.