

## SPACE PHYSICS SEMINAR

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## Jupiter's Dynamic Magnetosphere

Thursday, October 24, 2013 725 Commonwealth Ave. Refreshments at 3:30pm in CAS 500 Talk begins at 4:00pm in CAS 502

Abstract:

The gas giant Jupiter possesses a strong internal magnetic field that produces the largest magnetosphere in our solar system and leads to spectacular auroral emissions. Eight spacecraft have now visited the Jovian system, yielding a wealth of information about Jupiter's rotation-dominated magnetosphere and its internal plasma source, the volcanically active moon Io. The Galileo spacecraft, which was in orbit around Jupiter from 1995 to 2003, has provided the most extensive spatial coverage of the magnetosphere and the opportunity to study temporal changes on long time scales. In this talk I discuss the dynamic nature of Jupiter's magnetosphere and aurora, using both in situ spacecraft measurements and Earth-based telescope observations to illustrate changes on time scales from days to several years. I will focus on recent work in which we characterize long-term changes in Jupiter's magnetic field configuration due to current sheet variability and will discuss the resulting implications for the aurora. Finally, I will consider the relative roles of the solar wind and internal factors, such as rotational stresses or changes in lo's plasma production, in driving the many temporal variations in Jupiter's magnetosphere.