

Department of Physics Colloquium



Stuart D. Bale

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Plasma Kinetics in the Inner Heliosphere and the NASA Solar Probe Plus Mission

I will describe measurements of the electron velocity distribution function in the solar wind at 1 AU using the 3DP instrument on NASA's WIND spacecraft. Three distinct populations of electrons are observed and the collisional coupling between the cool, dense 'core' electron population and the solar wind protons can be observed directly. This Coulomb coupling relationship can be used to probe the electron distribution of the solar corona and suggests that the coronal electron population will be highly nonthermal. I will also describe the NASA Solar Probe Plus mission, which will launch in 2018 and orbit the Sun with a final perihelion altitude of 9.8 solar radii, well within the predicted Alfvén surface. Solar Probe Plus will make the first ever in situ measurements of plasma heating processes in the solar corona.



WISCONSIN

Friday, November 6, 2015

3:30 pm | 2241 Chamberlin Hall

Coffee & Cookies at 3:15pm

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