Space Science Seminar
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2:30 p.m.
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Inner Heliosphere - Density Turbulence and Speed Distributions

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In this talk, I will review the three-dimensional distribution of solar-wind density turbulence and speed in the inner heliosphere, based on interplanetary scintillation (IPS) measurements obtained from the Ooty Radio Telescope, which provides estimates of solar wind at most of heliospheric latitudes and in the distance range of ~10-250 solar radii. The solar wind estimates along a large number of lines of sight through the heliosphere allow the reconstruction of 3-D structures of quasi-stationary solar wind as well as propagating transients in the inner heliosphere. Some of the results on distribution of solar wind density turbulence and speed are discussed. Additionally, the reconstructed 3-D images of solar wind density and speed have been extremely useful to understand the propagation characteristics of coronal mass ejection (CME) events, even to track the far-side propagating disturbances. For example, in the current solar cycle, though weak, a group of large active regions produced five wide and fast CMEs during 12-23 July 2012. Ooty results of some of these events are compared with STEREO measurements, which included a behind the sun 'ultra fast' CME on 23 July 2014.

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