



**Interplanetary Scintillation Observations with a New Generation of Radio Telescopes:
First results from the Murchison Widefield Array.**

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Interplanetary scintillation is a powerful technique for remote sensing of the Heliosphere. Previous IPS studies have generally relied on single concentrated collecting areas (either phased arrays or dishes). The Murchison Widefield Array (MWA) by contrast is a new-generation instrument consisting of a 128-element interferometer with an extremely wide field of view, and outstanding instantaneous imaging capability. This enables the IPS studies of 1000 sources simultaneously, increasing the density of measurements by orders of magnitude compared with most other instruments.

In this talk I will report on progress from an ongoing IPS survey with the MWA where observations are made simultaneously at 79MHz and 150MHz. In addition to measuring scintillation strength (g-levels), Dual frequency measurements in principle allow solar wind velocities to be determined even with a single station. Furthermore, the different refractive indices at different wavelengths leads to a lag in the cross correlation of the two frequency bands. This allows the bulk density of the outer solar corona to be probed along multiple lines of sight. I will discuss recent results and how they might be integrated into international Space Weather Prediction efforts.