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Plasma Turbulence Near The Sun: New Observations From Parker Solar Probe CHRISTOPHER CHEN, Queen Mary University of London, PSP/FIELDS TEAM TEAM, PSP/SWEAP TEAM TEAM — In August 2018, the Parker Solar Probe spacecraft was launched on its journey to the solar corona, and in November it reached a heliocentric distance of 0.17 AU, nearly twice as close as any previous spacecraft. It has now completed its first two orbits and returned a wealth of data, enabling a detailed in situ study of the solar wind plasma physics in this unexplored region as well as its radial evolution out to 1 AU. In this talk, I will present results on the radial evolution of solar wind turbulence at MHD scales as measured by PSP, as well as a detailed examination of the properties of kinetic-scale turbulence at 0.17 AU. The results will be compared to our current theoretical understanding of plasma turbulence and its role near the Sun, to reveal both the extent to which it operates as a universal process, and to enable its potential role in the long-standing problems of coronal heating and solar wind acceleration to be investigated.

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