

Abstract Submitted
for the PSF21 Meeting of
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Plasma Turbulence in the Local Cavity of the Interstellar Medium STEVEN SPANGLER¹, University of Iowa — The Interstellar Medium consists of matter in space between the stars. For decades, it has been known that the Local Interstellar Medium is dominated by a cavity that is approximately 500 light years in diameter. The physical state and origin of gas within this cavity remain topics for research. The state of turbulence in the cavity gas is also of interest, and radio observations of pulsars can diagnose this turbulence. The existence of “pulsar arcs” in radio spectra of pulsars are particularly useful in that they determine the distance to possible thin sheets of turbulent plasma. Recently, Reardon et al (Astrophysical Journal 904, 104, 2021) have measured pulsar arcs for the nearby pulsar J0437-4715. They obtain a precise value for the distance to the primary turbulent sheet of 293 light years (89.8 parsecs). This distance is consistent with the “wall” of the Local Cavity in that direction, and suggests that turbulence is generated in the interface between the Local Cavity and surrounding gas.

¹Please schedule on Friday, November 12. I may have to leave early on Saturday, November 13.

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