

The Local Bubble and the Local Fluff

In this talk, I will discuss how nearby supernova explosions have influenced the local interstellar medium, carving out the interstellar cavity in which we currently reside (the “Local Bubble”) and shaping the properties of the warm, diffuse interstellar cloudlets that lie just beyond our heliosphere (the “Local Fluff”). First, thanks to *Gaia*, I will show how essentially all nearby star-forming complexes lie on the surface of the Local Bubble, and that their young stars show outward expansion perpendicular to the bubble’s surface. Using these young stars’ motions to reconstruct the star formation history of our solar neighborhood, I will explain how a set of supernova explosions beginning 14 Myr ago powered the expansion of the Local Bubble and led to a pile-up of dense, star-forming gas on its surface. Honing in on the past 1-2 Myr, I will show how the most recent supernova that went off in the Local Bubble’s pre-evacuated cavity can explain the 3D spatial and dynamical properties of the Local Fluff, the closest interstellar environment to our Sun. I will conclude by discussing how the Sun’s trajectory through the local interstellar medium has shaped our heliosphere over the past several million years.



Monday, November 27th

3:30 - 4:30 p.m.

CAS 502

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