Strange Dust Properties and Super-Extended Dust Shells: Stacking Evolved Stars with Planck & IRAS

Christopher Clark*[1]

[1]STScI / ESA – United States

Abstract

The intense stellar winds of Asymptotic Giant Branch (AGB) stars are known to be one of the main (and possibly the dominant) birthplace of interstellar dust grains. However, until now, studies of dust around AGB stars had been limited to the NIR–FIR regime, and the innermost 100,000 AU (0.5 pc) of the wind, where the dust is bright and easy to observe. I will present new work that reveals, for the first time, dust emission around AGB stars out to > 20 pc, by stacking with a large sample of AGB stars using all-sky far-infrared-to-millimetre data from IRAS and Planck. This reveals that the dust around AGB stars has very different properties to dust in the general Milky Way ISM, with emissivity index beta

*Speaker