

# Herschel's View of Debris Disks

Alexander V. Krivov and the Herschel/DUNES collaboration

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Debris disks copiously found around main-sequence stars are belts of planetesimals that failed to grow to planets. They are typically located at a system's periphery, similar to the Kuiper belt in our solar system. Collisions among planetesimals produce dust that scatters and thermally re-emits the stellar light, making debris disks observable. The Herschel Open Time Key Program DUNES (DUst around NEarby Stars, PI: C. Eiroa) is an unbiased, volume-limited survey that aims at the detection and analysis of debris disks nearly as faint as the Kuiper belt. We have detected dust around one-quarter of the stars in our sample, almost doubling the Spitzer detection rates for Sun-like stars. Our detections suggest two possible new classes of debris disks. One includes disks with unusually steep spectral energy distributions, indicative of a peculiar size distribution of dust. Another one is best described as extremely cold, both in terms of temperature and dynamical excitation. Brighter, well-resolved objects, exemplified by  $\alpha$  Eri and HD 207129, are studied individually. I will review these DUNES results and discuss their possible implications.