The debris disk of Epsilon Eridani as seen by Spitzer

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Abstract

Epsilon Eridani is one of the "Fabulous Four" debris disk stars discovered by IRAS, along with Vega, beta Pictoris and Fomalhaut. We present here our observations with the Multiband Imaging Photometer (MIPS) the InfraRed Array Camera (IRAC) and the InfraRed Spectrograh (IRS) onboard the Spitzer Space Telescope, that have confirmed the presence of the disk and produced the first spatially resolved image at 70 micron. Radiative transfer modeling shows that the disk SED and IRS spectrum can be reproduced by fitting the disk surface brightness at 70 micron and in the sub-mm with three dust components: one population of large grains largely responsible for the "ring" of emission at sub-mm wavelengths, and two smaller components (inside and outside the sub-mm ring) associated to the infrared excess at shorter wavelength.