

ISO Observations of Giants with Far-Infrared Excess

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It has been recently found that a small, but appreciable, fraction of first-ascent giants (luminosity class III) is associated with excess far-IR emission. While the dust particles orbiting pre-main-sequence, main-sequence, asymptotic branch giants, and supergiants can be understood in various ways, the presence of substantial dust near first-ascent giants is not easily explained. Three possibilities for the origin of the dust around first-ascent giants have been discussed by Jura: 1) cirrus hospot where emission is from interstellar dust that happens to be near the star, 2) sporadic mass ejection from the star, and 3) long-lived orbiting matter left over from the main-seque phase. We have observed a dozen of first-ascent giants with excess far-IR emission with 3×3 photometer of the *Infrared Space Observatory* at 60 and 90 μm . Here we present the results of our observations and discuss on the implication of the data on the above three models.