

SMALL GRAINS EXPERIENCING TEMPERATURE FLUCTUATION UNDER DIFFUSE INTERSTELLAR RADIATION FIELD

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Temperature history of very small interstellar dust particles is followed under diffuse radiation from stars in interstellar space. Because of extremely small thermal capacities of these grains in a few tens Å range, they are to experience strong fluctuations in temperature whenever they are hit by interstellar ultra-violet photons. Fluctuating temperature can inhibit these small grains from

growing into core-mantle particles of submicron sizes by continuously evaporating atoms and molecules adsorbed on their surfaces. This is interpreted as a possible physical reason for the bimodal size nature of interstellar grains. A brief discussion is also given to the far infrared emission properties of such small grains in interstellar dust clouds.

ABUNDANCE VARIATION AMONG GIANT STARS IN THE CENTRAL PART OF 47 TUC.

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Four Stars in the central region of 47 Tuc were observed spectroscopically using IPCS. The observed result showed that two asymptotic giant branch stars have the excess of carbon compared with the red giant branch

stars, which indicated that the radial colour gradient in a globular clusters at least for 47 Tuc, comes from the abundance gradient among the giant stars.