

# Avviso di Seminario

Mercoledì 05 ottobre 16:15 Sala Riunioni (1)

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Terrà un seminario dal titolo :

"The study of stardust grains provides evidence for mixing processes in stars."

**Abstract :**

Primitive meteorites contain small grains that originated from stars, in other words stardust or presolar grains. They are condensates in stellar atmospheres or ejecta from stellar explosions. Isotopic analysis of the grains provides information about stellar nucleosynthesis. It also provides evidence for mixing processes in stars. An example are oxide grains with low  $^{18}\text{O}/^{16}\text{O}$  ratios. Although most oxide grains have  $^{17}\text{O}$  excesses and slight  $^{18}\text{O}$  deficits, which can be explained by the first or second dredge-up in stars, to explain large  $^{18}\text{O}$  deficit in some grains, an extra mixing process, also called Cool Bottom Processing, taking place during the AGB phase has been invoked. This process circulates material in the star's envelope to regions close to the H-burning shell. It also explains the large inferred  $^{26}\text{Al}/^{27}\text{Al}$  ratios in grains with large  $^{18}\text{O}$  deficits. Another example of evidence for mixing is the isotopic composition of grains from core-collapse supernovae. The isotopic signatures observed in these grains originate in different layers of the star before explosion and these layers had to be thoroughly mixed before the grains condensed from this mix.

Il Direttore  
Dr. Pasquale Lubrano