

Final Report: Presolar Grains as Tracers of Nebular Processes.

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This grant provided two years of funding to investigate the abundances of presolar diamond, SiC, and graphite in primitive chondritic meteorites. The original proposal was for a three-year study, but two years of funding were awarded. The proposed work plan for the first year included preparation of acid residues for two meteorites and noble-gas measurements on those residues and residues of two other meteorites that had been previously prepared. The meteorites to be measured were Acfer 003, Adrar 214, RC075, and Axtell. In the second year, the plan called for measuring Renazzo and Murchison, and beginning chemical processing on another set of meteorites, including Murray, which were to be measured in the third year. All of the meteorites listed above have been measured and the results were presented in three abstracts (Huss et al., 1998; Huss et al., 2000; Huss et al., 2001). The project is continuing under follow-on grants and one of two planned major papers is almost ready for submission (Huss et al., 2002).

Abstracts resulting from research supported by this grant:

- Huss G. R., Meshik A., Kehm K. and Hohenberg C. (1998) Presolar diamonds in Roosevelt County 075 and Axtell: Abundances and noble-gas characteristics. *Meteorit. Planet. Sci.* **33**, A72.
- Huss G. R., Meshik A. and Hohenberg C. (2000) Abundances of presolar grains in Renazzo and Axtell: Implications for their thermal histories. *Lunar Planet. Sci.* **XXXI**, #1467.
- Huss G. R., Meshik A. and Hohenberg C. (2001) Presolar grains in CM2 chondrites. *Lunar Planet. Sci.* **XXXII**, #1685.

Papers resulting from research supported by this grant:

- Huss G. R., Meshik A., Smith J. B. and Hohenberg C. M. (2002) Presolar diamond, silicon carbide, and graphite in carbonaceous chondrites: Implications for thermal processing in the solar nebula. *Meteorit. Planet. Sci.*, in preparation.