

## Nano-diamonds in the Universe

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The first direct evidence for nano-diamonds in space came from meteorites. Laboratory analyses on fine-grained diamond residues from primitive meteorites have shown that nano-diamonds represent the most abundant form of stardust preserved in meteoritic samples. The meteoritic nano-diamonds carry isotopic anomalies, which indicate the presents of several groups of diamonds possible with an origin in different types of stellar environments. In order to identify the sites of formation observationally, we have measured the optical properties of the meteoritic nano-diamonds [1]. Based on these observations [2] have shown that nano-diamond dust is successful in reproducing the 1000 Å break as well as the far-UV rise seen at shorter wavelengths in distant quasars. We are also currently using the optical properties of nano-diamonds in our models of the wind properties of late-type stars [3].

[1] H. Mutschke, A.C. Andersen, C. Jäger, Th. Henning, A. Braatz, *A&A*, **423** (2004) p. 983

[2] L. Binette et al., *ApJ*, **in press** (2005)

[3] A.C. Andersen, S. Höfner, R. Gautschy-Loidl, *A&A*, **400** (2003) p. 981