Cometary Chip 9

Track 13

Images

Aerogel chip: From unknown cell

Aerogel Chip:

Track and Grains:

Microtomed samples:
Frag13B_Track_13_particle_1_microtomed_sections.pdf

Track History:
Chip 9 was found on the surface of the canister upon opening, and has not been tied to a specific cometary cell. Feature 12 was a small track whose terminal particle was extracted by Chris Snead, mounted in S and sliced 2/6/06 at JSC.

Track Characteristics:
Type: carrot with terminal grain
Length: ~1.5mm
Grain 1 diameter ~9μm

Allocation History

Results

Grain 1
Butterworth [STXM]: One particle is C rich. One metallic iron particle. Low Ni. Spacecraft?

Stroud [TEM]: Crystalline silicate. The diffraction patterns (three different zones recorded) suggest a monoclinic phase with lattice parameters close to enstatite, but some reflections from enstatite are missing. It could be overcoated with some melted aerogel. (Mg+Fe)/Si is 2/3. Same particle was rich in C according to Cody and Alexander.

Rietmeijer (TEM) reports amorphous silicates in the sample, and perovskite on one grid which is not clearly associated with the sample and so could be contamination.
G. Cody and C.Alexander: Particle was rich in C

K. McKeegan (SIMS): Grain 1 has a modest enrichment of D.