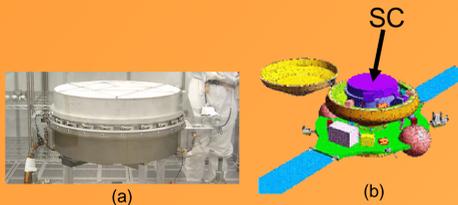


# GENESIS SPACECRAFT SCIENCE CANISTER PRELIMINARY INSPECTION AND CLEANING.

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## Spacecraft Canister Cleaning:



Pre-flight Configuration (a) and location (b) of the Genesis Science Canister (SC) inside the Spacecraft Return Capsule (SRC).



The cleaning process consisted of gentle sweeping and vacuuming of fine particles.



Exterior (above) and interior (below) views of the science canister base before cleaning (left) and after cleaning (right).

The circular openings in the base, beginning with largest, were sites for mounting the concentrator, filter, and array deployment mechanism.



Interior (above) and exterior (below) views of the science canister cover before cleaning (left) and after cleaning (right).

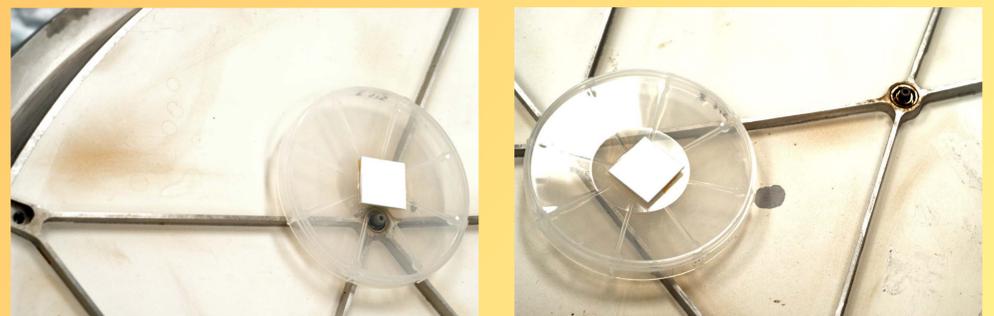
The array grid inside the canister was the B-array frame which, during flight, held an assortment of semiconductor collector surfaces.

## Spacecraft Canister Inspection:



400µm Micrometeorite Impact

One crater, with morphology of typical micrometeorite impact craters, was observed. The crater, approximately 400 µm in diameter, is surrounded by a dark halo. The apparent impact may have resulted in removal of white paint surrounding the impact site.



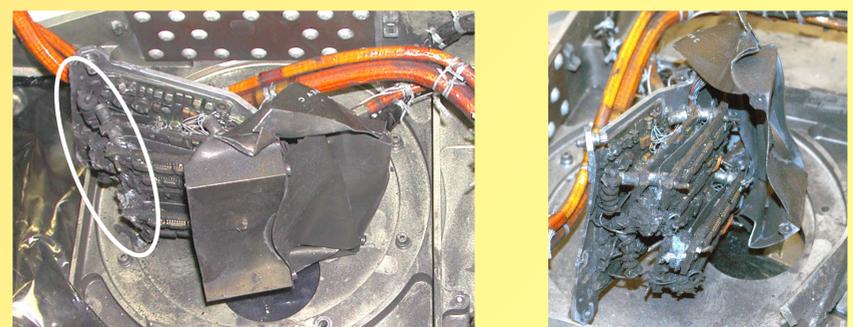
Gradient of Discoloration of the painted surface of the spacecraft

Discoloration appears around rib "shadows". Accurately mapping and analyzing the distribution of discoloration may be useful. Interior parts of the canister, which are unpainted and unanodized aluminum, also have discoloration referred to as "brown stain" which is thought to be due to UV polymerization of a hydrocarbon or siloxane contaminant. However, it is unclear whether the two types of discolorations are due to related mechanisms. The white square, sitting in a 4-inch dish, is pre-flight reference material.



Dark Residue and White Spherical Matter

Dark, dusty residue can be seen on both sides of the canister base. Located near the filter site, larger white spherical particles are admixed with the dark residue. These white spheres are thought to be filter media debris. Potential sources of the dark dust are filter debris, heat shield debris, or ablation products. Tape pull samples of the dark material were obtained from these areas for analysis.



Deformation of Circuit Components

In addition to mechanical damage from the hard landing, a few printed circuit board components exhibit plastic deformation, perhaps due to thermal damage.