

# GENESIS

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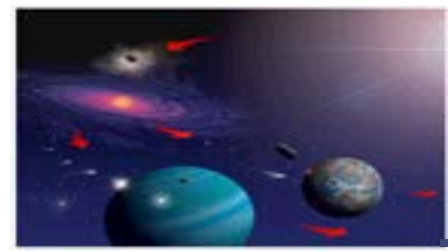
## CURATION

**Judy Allton**

**Carla Gonzalez**

**Kimberly Allums**

CAPTEM March 19, 2016



### March 1, 2015 to Feb. 29, 2016:

- 6 Requests, 9 Genesis-flown samples allocated to 4 PI s
- 1 Request, 2 Reference materials to 1 PI s
- Science requests for Os abundance and 187/188 ratio,
- Cleaning/contamination requests: assessment for welded particles using APT, HF cleaning, FT-IR surface films, acetate peel,

### Total to date:

- 597 Genesis-flown
- 329 Reference materials

## CURATION – Inventories/Facilities

- **9 of 19 investigators have returned inventories**
- **JSC inventory:**
  - 4260 verified at JSC
  - 53 WSTF
  - 219 with investigators
- **Laser scribing subdivision not yet available. Suspended for micro CT scanner installation. Options for subdividing SiC, CVD diamond targets being researched.**

## CURATION: Publicizing Samples

### Advanced Search Form

Enter one or more advanced search criteria:

Collector Type

Materials

Regime

### Advanced Search Form

Enter one or more advanced search criteria:

Collector Type

Materials

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Collector Type


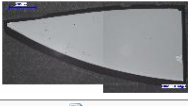


Materials

### Online catalog

Search Options Selected - Material: Diamond-Like Carbon on Silicon Target

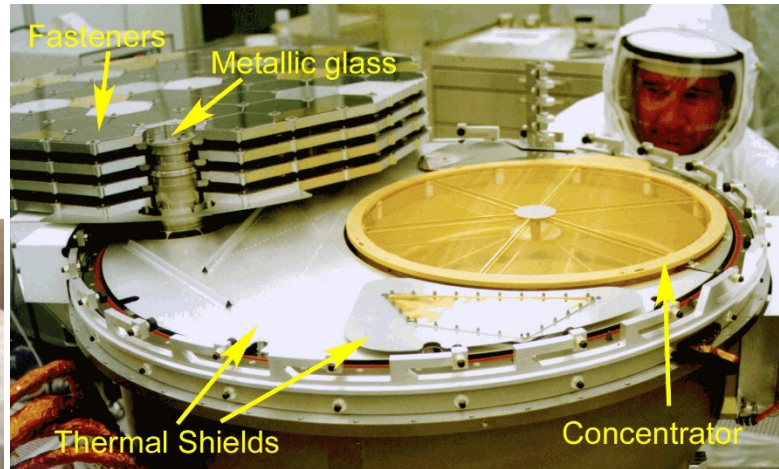
Search Again

Show 10 entries Search all columns:

Sample No	Material	Regime	Length	Width	Area	Thin Film Thickness	Material Condition	Availability
 41034.0	DOS target		11.636	6.232	53.030		Fair	Available
 41035.0	DOS target		13.490	6.508	45.182		Fair	Available
 41251.0	DOS target		7.851	7.162	37.245		Fair	Available
 41299.0	DOS target		9.120	5.330	22.157		Fair	Available

## CURATION: Publicizing Samples

- Genesis-flown sample database modified to accommodate non-collector canister hardware – **Genesis science takes priority on requests**
- Added 191 canister hardware samples to Genesis-flown sample database.
- Next step: characterize these materials and select subset for posting online. Subset will contain surfaces exposed to the solar wind or relevant contamination sources.



From capsule,  
White paint

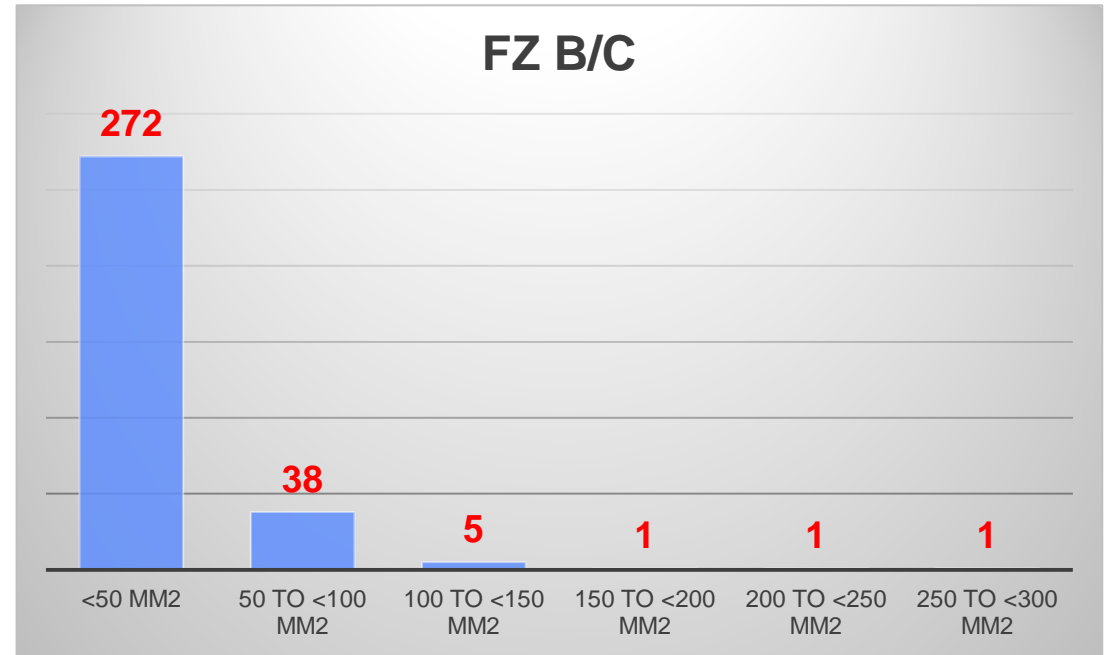
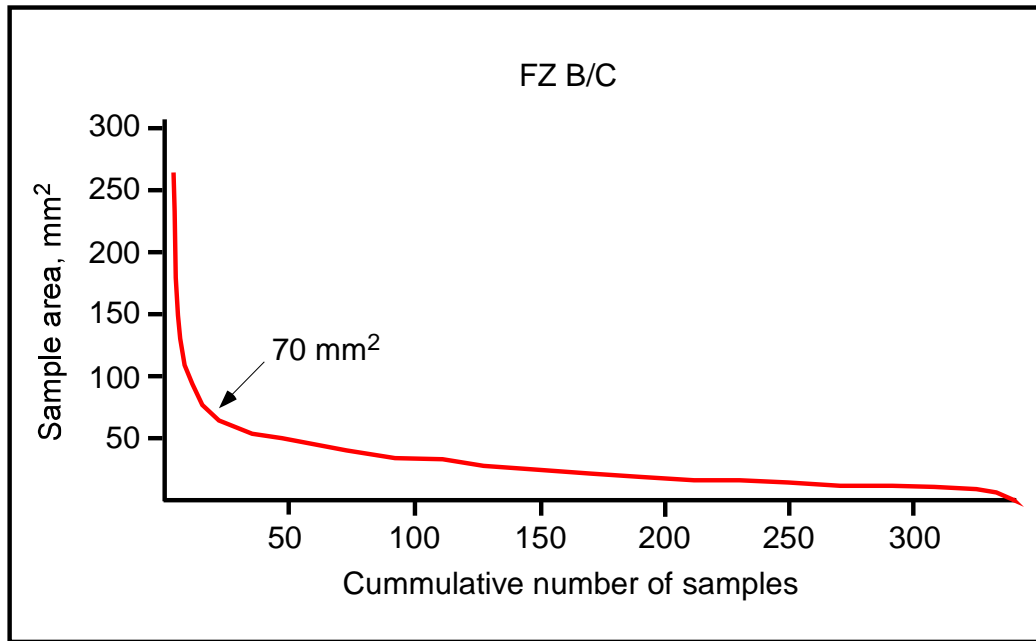


## **CURATION: Balancing sample use vs conservation**

- **LUNAR: do not use more than 50% without special justification**
- **GENESIS preliminary assumptions for collectors:**
  - Use sample area
  - Any “rules” will require adjustments for array wafer samples
    - Size distribution is different for silicon-based compared to sapphire-based
    - Surface quality
    - Size distribution and surface quality likely varies with regime for array wafers
    - **New samples will be continually added in smaller size range**
  - **Non-wafer samples – more straightforward (targets, gold foil, polished aluminum, etc.)**
- **Discussion topics:**
  - lifetime of samples (diffusion of solar wind, chemical bonding with contaminants with time)
  - pushing limit on analyzing smaller sizes (cleaning with UPW, instrument/matrix issues)

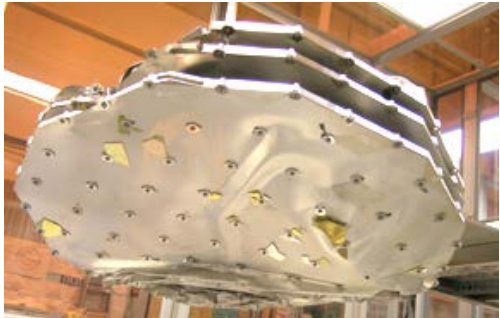
## CURATION: Balancing sample use vs conservation

PARAMETERS AVAILABLE: area size, substrate, regime  
EXAMPLE using FZ silicon, bulk solar wind (B/C arrays)



## CURATION – the bright side

- New, but smaller, samples are continually added
- Samples from regime arrays (high speed, coronal mass ejection, interstream low speed) appear to be less damaged and cleaner. These are currently less requested.



Regime samples were protected between the arrays.

