Initial description and analysis of Hayabusa2 returned sample

Extra-terrestrial Sample Curation Center (ESCuC)

ISAS, JAXA

December 8, 2020
Gas Sampling at Quick Look Facility in Woomera

- Recover reentry capsule
- Securing works
- Remove battery and electronics box
- Cleaning
- Sample gas inside container
Cleaning & Disassembling the Container in Class 10K Clean Room at ISAS

1. Transfer to Japan
2. Arrive to ESCuC
3. Remove a heat shield
4. Cleaning
5. Set the container to container opening jigs
6. Remove an outer lid, springs, NEA, and frame for latches
7. Transfer to the clean room for HY2
Hayabusa2 clean chamber

CC3-1 ~ Open the sample container in vacuum
CC3-2 ~ Recover a part of container and samples in vacuum
CC3-3 ~ Exchange environment from vacuum to purified N₂
CC4-1 ~ Manipulate samples of <mm size
CC4-2 ~ Handle samples of >mm size
Video of picking samples in CC3-1 (rehearsal)

Handpicking simulant particles in vacuum

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x6 speed
Work of Initial Description in N2 environment (CC-4)

Nitrogen Condition

Transfer catcher to CC4-1 and 4-2

Recover samples from each chamber of the catcher

Observe recovered samples with optical microscope

Weigh samples with microbalance

Analyze Vis/IR spectra of samples with FT-IR and MicrOmega

Sample storage

Sample distribution

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Sample distribution Schedule (plan)

Phase 1 curation for most of returned samples

- Dec. 2020
  - Initial description for int. AO
  - Sample Allocation to Community through Int. AO
  - Storage 40 wt%
  - Int. AO 15 wt%
  - NASA 10 wt%
  - Overseas 10 wt%

- Jun. 2021
  - Initial Analysis 15 wt%

- Dec. 2021
  - Initial description for int. AO

- Jun. 2022
  - Allocation volume will be determined by the next HSAC.

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