Current status of Hayabusa sample curation and development of curation facility for Hayabusa2

はやぶさ試料キュレーションの現状と はやぶさ２受入設備開発状況について

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ABSTRACT

After the sample return by Hayabusa spacecraft from near-Earth asteroid Itokawa in 2010, the Astromaterial Science Research Group (ASRG) of JAXA has conducted initial descriptions of Hayabusa-returned samples. So far, more than 800 particles have been recovered and described by SEM-EDS without exposing to air, and more than 80% of them are Itokawa origin. The size distribution of Itokawa particles are examined and the power law of those larger than 50μm is -2.0, which is comparable to that of around 50 Itokawa particles reported by Tsuchiyama et al. (2011). Compared with that from Room A of sample catcher, that from Room B shows a steeper inclination which indicates that they are enriched in smaller particles. However, it should result from artifact due to crashing which had occurred in Room B. The mineral modal abundance of Itokawa particles is comparable to that of equilibrated LL chondrites. That from Room A is relatively enriched in olivine and high-Ca pyroxene, and that from Room B is more similar to that of LL chondrites, even though it is a little bit enriched in plagioclase. They might result from affection of mineralogy of a few larger particles. The specification of curation facility for Hayabusa2 returned samples are going to be determined by ASRG in cooperation with its advisory committee. A new cleanroom will be established and new clean chambers composed from five rooms of different functions will be manufactured and be set in the cleanroom.