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Remote Storage of Lunar Samples

Over the past 2 years, we have been taking measures to provide safer and more secure storage for the sample collection, which we view as a fundamental and irreplaceable resource for the next decades of scientific research in planetary studies. To reduce the probability of damage to a major part of the collection at JSC, we have dispersed the collection into several vaults around the site. We are now in the final stages of preparation of a facility to store a portion of the sample collection at a location remote from JSC. The site chosen is the Brooks Air Force Base in San Antonio, with which JSC has had a long working relationship. Brooks is the home of the Aerospace Medical School and was deeply involved in the medical testing of the earliest astronaut groups and carried out fundamental supporting research in space medicine.

The selection of samples may be of particular interest to you. We view the remote facility as a place that will store samples for a long time. It will be extremely difficult and time-consuming to remove material from the facility. We do not intend to recall material assigned there except in the most severe conditions of scientific necessity. Therefore, the selection of proper samples is critical.

We have worked with LSAPT to review the entire sample collection and identify a representative collection of materials. All petrologically distinct rock and soil types, all samples that are unique or highly unusual, all samples that were collected in special ways, all large or widely studied samples, with a few exceptions, will be included in the remote storage facility. To insure that ample material remains at JSC, no more than 30% of the existing pristine material of any sample will be stored away. Two complete double-drive tubes have been selected for storage (approximately 15% of the core collection). In all, we have identified about 15 per cent (by weight) of samples in the collection to store at Brooks. Construction will be completed around mid-December and the samples will be moved as soon after as we can certify the readiness of the facility. Most samples will be taken from material already packaged in appropriately-sized pieces; rocks to be processed in the next 3 months have been selected to provide additional samples for remote storage.

In order to reduce the original cost and operating cost of the facility, we have spent considerable effort over the past year to design a "static" storage configuration that will maintain low water and oxygen levels indefinitely, without the continuous nitrogen flow we use in the Curatorial cabinets at JSC. We have designed stainless steel bolt-top containers that are leak tight at levels of 2×10^{-10} cc He/sec and seal reproducibly. We have also designed storage cabinets that will maintain low water and oxygen levels (<50 ppm) even if only occasionally purged with nitrogen.

Sample Requests

Along with the effort described above, we are continuing to respond to sample requests from PIs. In the next few months, we expect to be able to maintain a decent stream of new samples to investigators who require additional material.

Core Progress

We have finished the dissection of drill stem section 70009 and 70007 and will begin next on 70004. Upon completion of that section, we will be halfway through the Apollo 17 deep drill string. We are continuing to work on drive tube 60009. With a large number of small allocations prepared for survey of Min-Pet and magnetic studies, and the sequential dissection of three separate layers, the number of subsamples from that core is now about 1300. We expect to complete dissection of the core in about 2 months, after which 60010 will be opened. A Core Catalog Supplement on 70009, 70007 and 60009 will be forthcoming.

Apollo 11 Reexamination

We are steadily progressing with the reexamination of Apollo 11 samples. By early spring we hope to be able to issue an updated Apollo 11 Sample Catalog.

Sample Containers

Please don't throw away our stainless steel sample containers (McKinney containers, nut and bolt; FTH containers, steel vial with teflon cap). They are expensive and we would like them back if you no longer have a use for them.

New Sample Requests

The next DEADLINE for sample requests is OCTOBER 15, 1975.