



LUNAR SAMPLE NEWSLETTER

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NEXT LAPST MEETING IS SEPTEMBER 30 - OCTOBER 2, 1983

The Lunar and Planetary Sample Team (LAPST) met at the Lunar and Planetary Institute June 10-12, 1983. LAPST reviewed 13 requests for lunar samples from 12 investigators and recommended allocation of 172 samples (total weight of 177.7 grams) and 97 thin sections. The team also endorsed the allocation of three samples (total weight, 10.0 grams) and 13 thin sections recommended by the Curator in response to six lunar sample requests between the March and June meetings.

Studies related to the Highlands Initiative generated requests from four investigators and accounted for more than half of the allocated samples. Three investigators requested samples related to the Lunar Regolith Initiative, demonstrating a continuing interest and effort in this area.

Other requests supported:

- o A search for meteoritic residue in microcraters on metallic fragments
- o A study of the origin of fluid inclusions observed in lunar thin sections
- o Utilization of lunar materials.

The JSC Public Affairs Office was allocated a sample of lunar glass mounted as a temporary display in response to a request for an exhibit at the International Conference on Glass in Planetary and Geological Phenomena.

Three requests reviewed at this meeting involved study of the samples in the Lunar Sample Laboratory by one or more members of the investigator teams prior to the final selection of samples for analysis.

LAPST will meet again September 30 through October 2, 1983. We welcome your requests anytime; some allocations can be made between LAPST meetings. We especially encourage you to submit your requests well ahead of the LAPST meeting.

Hurricane Alicia

On August 17, 1983, Alicia, the first hurricane of the 1983 season hit land south of Galveston with winds in excess of 120 miles per hour. It then took an unexpected northerly turn and passed with 10 miles of Johnson Space Center.

Building 31, which houses the Solar System Exploration Division and which until 1978 housed the Apollo lunar sample collection, suffered severe roof damage and took in a large amount of rain water. The Lunar Sample Building (Building 31A) which was built for just such storms and worse, survived with no damage whatsoever.

Hurricane procedures, practiced every spring, worked smoothly and efficiently. No meteorite, lunar, or cosmic dust samples were disturbed by the storm. All three sample collections were secured in ample time for the employees to get home and secure their own property.

Conference on the Origin of the Moon

LAPST is organizing a conference on the Origin of the Moon. To help promote communication among various planetary science communities, the possibility of holding the conference in conjunction with the Division of Planetary Science (DPS) meeting to be held in Hawaii in October 1984, is being considered. DPS members, including Clark Chapman (DPS President), have expressed interest in the conference and in the possibility of DPS co-sponsoring it. LAPST will continue to discuss this idea with DPS.

Workbook on Regolith Breccias Available

A workbook by Ruth Fruland which describes in more detail the list of regolith breccias published in the last Lunar Sample Newsletter is now complete and available from the Planetary Materials Branch. The suite of samples described is limited to ten breccias from every mission except for Apollo 12 where all three are described. Thus, while it is not exhaustive, the workbook offers many examples of various types of regolith breccias collected at the various sites.

If you have not received a copy, you may request one by writing to:

Curator, SN2
NASA/Johnson Space Center
Houston, TX 77058

Updated Lunar Handbook of Lunar Soils Available

A two volume handbook describing lunar soils with a complete bibliography is now available from the Planetary Materials Branch. Collection details, maturity parameters, grain size parameters, major and trace element composition, and petrography are reported for each of the soils in the lunar collection. References for additional data are included as are site maps and other background information.

If you have not received this handbook, you may request one by writing to:

Curator, SN2
NASA/Johnson Space Center
Houston, TX 77058

Return to the Moon -- Lunar Utilization

The idea of a manned lunar base in your future continues to strike responsive chords at many levels within NASA. Mike Duke and Wendell Mendell, the chief JSC protagonists, have made steady progress in their advocacy. Current efforts are beginning to focus on a workshop in the spring, to define the role of a lunar base and its impact on the future Space Transportation System.

In a more immediate development, three NASA Summer Faculty Fellows conducted simple experiments to discover whether lunar soil components in aqueous solution enhance or impede the growth of microorganisms. Following different approaches, all three ultimately observed a net enhancement of activity in the presence of lunar soil. An important outcome of the exercise was the development of better experiments! Two other Faculty Fellows worked on measurement of solar wind hydrogen in lunar soil ilmenite and on characterization of particularly efficient trapping mechanisms in that mineral. The abundance and location of trapped hydrogen are key parameters in lunar colonization scenarios.

"New" Lunar Samples

We have reached the end of the first series of slabbing efforts. The slabbing has been successful in disclosing several new and interesting clast types. We are concentrating our limited workforce on becoming current with other lunar processing. Meanwhile, we are considering the next activities for making "new" samples available. These include the opening of a particularly interesting Apollo 17 core (cores from 8 of the 24 coring sites remain unopened) and a systematic survey and characterization of the more than one million 1-4mm fragments in the lunar collection.

Your suggestions are welcome as we develop the plan for the next year.