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ATTACHMENTS AND ENCLOSURES

I. Explanation of the Inventory Listings - Microfiche copies enclosed

II. The Apollo 11 Drive Tubes - Dissection and Description

REQUESTS FOR SAMPLES

The Lunar Sample Analysis Planning Team will meet in May to consider sample requests. Since the next meeting will not be until September, sample needs for the whole summer should be anticipated. Please get requests to the Curator before the end of April so that background information can be assembled before the meeting.

SYNPOSIA ON EXTRATERRESTRIAL MATERIALS - SEPTEMBER 1978

The Commission on Cosmic Mineralogy of the International Mineralogical Association (IMA) will hold two Symposia during its forthcoming meeting as part of the 11. General Meeting of the IMA at Novosibirsk, Siberia, USSR (Sept. 4-10, 1978). These are devoted to "Experimental petrology of extraterrestrial materials and their origin" (co-sponsored by the Commission on Experimental Petrology of the International Union of Geological Sciences) and to "Lunar and meteorite mineralogy." Each symposium will be allocated 1/2 day in the program and persons interested in giving talks should submit titles and brief abstracts as soon as possible to the Chairman of the Commission on Cosmic Mineralogy of the IMA, Professor Dimitry P. Grigoriev, Director, Institute of Mineralogy, Mining Institute, 199026 Leningrad, USSR (with copies to the Secretary, K. Keil, Dept. of Geology and Institute of Meteoritics, University of New Mexico, Albuquerque, New Mexico 87131, USA).

SAMPLE MIXUP

A number of PI subdivisions of soil 12023 were returned to the Curatorial facility and one of these subdivisions was reissued to D. S. McKay for characterization. The results were reported by Morris et al. (1977) in the Proceedings of the 8th Lunar Science Conference, pages 2449-2458. They found that this sample was virtually indistinguishable in major element chemistry, petrography and FMR linewidth from the Apollo 14 soils. Subsequently, however, other investigators reported that 12023 was typical of the Apollo 12 soils. A curatorial investigation that involved going through sample histories and other records, plus an FMR survey, showed that all aliquots of 12023 except the one issued to McKay and possibly the one issued to Walker (it was not available for the FMR survey) are normal Apollo 12 mare soils. Apollo 14 soil subsamples were returned to the Curatorial facilities from the same PI laboratory that returned the 12023 subsamples. It appears as though one of the Apollo 14 samples was returned labeled as a subsample of 12023, and it was this Apollo 14 subsample that was studied and reported on by Morris et al.

Needless to say, this mixup has caused considerable extra effort and embarrassment The Curatorial staff apologizes to those involved. Every effort is made to avoid sample mixups in the Curatorial laboratories. PI laboratories must also exercise great care because returned samples are reissued for further studies. If much doubt is cast on the pedigrees of returned samples, few PI's will dare accept any for their studies. Thus, a great sample resource is lost and a greater demand is put on the collection of pristine samples.

LUNAR SAMPLE INVENTORY

Enclosed with this Newsletter is a microfiche copy of the lunar sample inventories listed a) by sample number; b) by location. Appendix I is an explanation of the computer format and the abbreviations used in these inventories.

These listings may be useful to lunar scientists in several ways. An idea of the extent of study on given samples is quickly gained from the number of subsamples that have been produced from it. The names of investigators currently having subsamples (shown as sample location) and those having had subsamples (shown in the description field) give an idea of the nature of the studies if the research areas for the investigators are known. The sorting by sample locations will probably not be useful to most PI's, except for the last two microfiche cards which show samples held by PI's.

The inventories are produced weekly. We will probably send copies to all PI's annually, but would gladly send them to individuals whenever they request them. Please telephone or write comments or questions about the listings.

PRIORITIES FOR OPENING LUNAR CORES

During the 9th Lunar Science Conference a meeting for all participants in core studies was held on the schedule for processing the remaining unopened samples. Among petrographers and chemists, there was strong sentiment for concentrating efforts on one mission in order to be able to report on completed and integrated studies for single landing sites. The Apollo 15 cores are the most popular candidates for this sort of study. Investigators of exposure effects are most interested in cores from the most recent mission - Apollo 17 - because the short half-life radionuclide ^{22}Na is most likely still present in measurable amounts.

There are now three nitrogen cabinets for core dissections and descriptions. Two of them are of a later design and large enough for the extrusion and dissection of the larger diameter (4 cm) drive tubes of the latter three missions, Apollo 15, 16, and 17. The third cabinet was used extensively for dissection of the deep drill cores, which were of small diameter (2 cm) and were slit open along the sides rather than being extruded. The last of the drill cores (70002) is just being completed in the small cabinet. This cabinet will then be used for dissections of the remaining smaller diameter drive tubes, 3 from Apollo 14 and 1 from Apollo 12.

Below is a schedule for the dissections, allocations and catalog descriptions of the remaining core samples. These remaining samples represent somewhat less than half of the total length of the Apollo cores, but well over half the total weight of core sample. Spectral reflectance imaging, peel preparation, impregnation, and preparation of polished thin sections will be finished 2 to 3 months after the completion date shown for each core. It should be noted that allocations can be started as soon as one or two months after start of dissection.

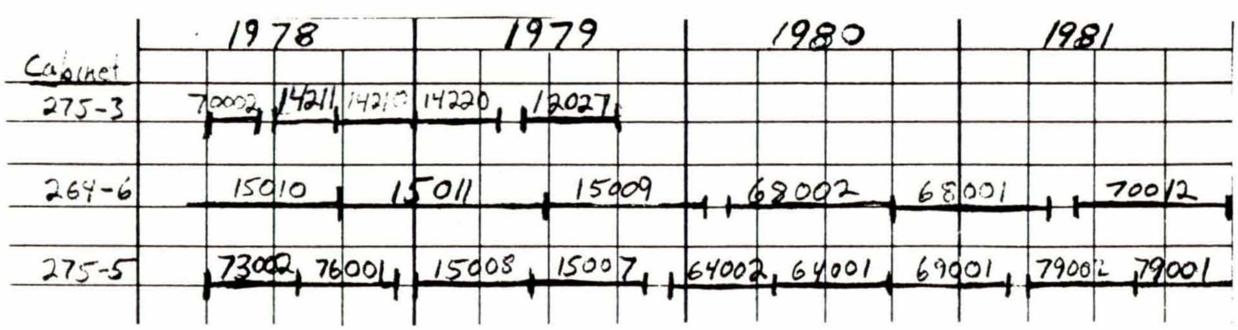
The strategy of the scheduling can be followed by referring to the graph. During 1978,73002 and 76001 will be dissected and allocated in support of the radiation counting studies. Furthermore, these two cores, in combination with data from the deeper drill cores, will allow studies to focus on the light soils of Apollo 17. Then, during 1979, the two large cabinets will be devoted to Apollo 15 to allow concerted studies on a single mission. In 1980 the remaining Apollo 16 cores, excepting the two in Remote Storage, will be nearly completed. The last Apollo 17 cores will be dissected in 1981. Of course, it is possible to make changes to the schedule so suggestions would be welcome.

SCHEDULE FOR CORE SAMPLE
DISSECTIONS AND ALLOCATIONS

Number	Type*	Sample Weight(g)	Length (cm)	Scheduled Start	Scheduled Completion	Comments
10004	SDT	65	14.0	Done		Disturbed, no impregnated sections
10005	SDT	51	11.0	Done		"
12025	DDT-U		9.5	Done		"
12028	DDT-L		31.6	Done		"
12026	SDT	107	19.3	Done		"
12027	SDT	95	17.4	5/79	9/79	
14210	DDT-L		32.5	8/78	12/78	
14211	DDT-U		7.5	6/78	8/78	
14220	SDT	81	16.5	12/78	4/79	
14230	SDT	71	12.5	Done		
15001-15006	Drill	1344	242	Done		Discontinuous thin sect coverage except 15003 which has cont. coverag
15007	DDT-L	228	35.6	6/79	11/79	
15008	DDT-U	510	30.4	1/79	6/79	
15009	SDT	622	38.5	7/79	2/81	

Number	Type*	Sample Weight(g)	Length (cm)	Scheduled Start	Scheduled Completion	Comments
15010	DDT-L	741	28.9	--	9/78	
15011	DDT-U	661	32	9/78	6/79	
60001-60007	Drill	1009	189.7	Done		
60009	DDT-L	760	65.4	Done		
60010	DDT-U	635				
60013	DDT-L	757	63.1	Indefinite		In Remote Storage Vault
60014	DDT-U	570		Indefinite		" " "
64001	DDT-L	752	65.6	5/80	10/80	
64002	DDT-U	584		12/79	5/80	
68001	DDT-L	841	62.3	8/80	4/81	
68002	DDT-U	584		2/80	9/80	
69001	SDT	558		10/80	3/81	In sealed container
70001-70009	Drill	1768	292.1	Done		
70012	SDT	485	18.4	5/81	12/81	
73001	DDT-L	809	56	Indefinite		In Remote Storage Vault
73002	DDT-U	430		3/78	7/78	
74001	DDT-L	1072	68.2	Done		
74002	DDT-U	910				
76001	SDT	712		7/78	12/78	
79001	DDT-L	743	54.5	9/81	2/82	
79002	DDT-U	409		4/81	9/81	

* SDT single drive tube. DDT double drive tube. -U upper. -L lower.



ATTACHMENT I

EXPLANATION OF THE INVENTORY LISTINGS

The fields for the listings are designated like this:

(Sample Number) Generic	Specific	Parent	Location	Container	Weight (g)		Description
12015	0	0	268 6 21 21	83 1959	95.830	VER	3DOC CP191.2
12015	1	0	313 2 C 18	PV	1.145	RET	CPS+FI
12015	2	5	ATTRITION		1.405		ORIG.PROC.
12015	3	0	BSV 71 4C 1053	84 4197	35.300	VER	DOC CP
12015	4	0	268 6 21 21	9 2337	.430	VER	SM CPS + FI
12015	5	0	ATTRITION		.300		
12015	6	0	268 6 21 21	9 8711	1.600		DOC CP
12015	7	0	268 6 21 21	251 841	53.100		DOC CP
12015	8	6	313 11 C 1	PB	.080		PB
12015	9	6	RHODES.JM	9 8880	.790	17	DOC CP

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Sample numbers are composed of two parts: the generic part and the specific part. Each sample as returned from the Moon receives a generic number at the time of its first weighing. (This weight is stored as the rightmost item in the "Description" field for the specific sample ,0.) The mission is identified by the first one or two digits of the five digit generic numbers as follows:

Initial Digits	Mission
10	Apollo 11
12	Apollo 12
13	Mixed sample from more than one mission
14	Apollo 14
15	Apollo 15
20	Lunar 16
21	Lunar 20
24	Lunar 24
6	Apollo 16
7	Apollo 17

(Lunar 16, Lunar 20, Lunar 24:) In the listing by sample number, these follow Apollo 15 on the same microfiche.

The generic for each mission that is XY999 is for samples from more than one of the other samples from the mission, such as would be obtained by flushing with Freon a cabinet used for processing a number of samples all from the same mission. The latter digits of the generic numbers contain sample location and type (rock, soil, etc.) information for Apollos 15, 16, and 17, as explained in the sections on numbering in the Catalogs for the missions.

Specific numbers are usually assigned to subsamples in increasing numerical order as the subsamples are produced from other subsamples. Gaps in the numerical order or deviations to the chronological order may occur because different subsamples of the same generic sample are dubdivided in different laboratories during the same period. Certain conventions have been used for assigning specific numbers to core samples, as will be explained in a future edition of the Catalog of Lunar Core Samples. Also, specific numbers in the 9000 series are used for partial samples transferred from one PI to another.

The parent number for each sample is the specific number for the sample from which the sample was subdivided. In the curatorial data files, the weight,descriptive and photographic data on all of the specific samples are filed together under the sample number of the parent sample. The parent number is useful in relating thin sections to the chips from which they were made and for ascertaining if any of a given chip remains for obtaining more thin sections. In core samples, the parent numbers show what samples came from the same dissection intervals. Samples returned by a PI are associated to the PI through use of the number of the originally issued sample as parent to the sample splits as returned.

The location field shows either the location of the sample or that the sample is an accounting sample such as ATTRITION for sample lost as fine dust in processing (some of which is recovered from Freon used to flush the cabinets) or CONSUMED where the sample is destructively analyzed. Samples in the Curatorial facilities have coded locations. The left-most word is the building or room designation. BSV is the Brooks Storate Vault at Brooks Air Force Base in San Antonio where a representative suite of samples, amounting to about 15% of the weight of the entire collection, has been put into indefinite long-term storage as a backup to the collection at JSC. (Most of the samples at Brooks are subsamples of samples well-represented in the working collection at JSC. There would have to be a very compelling reason to justify return of any sample from BSV to JSC.)

Until the storage vault in the new curatorial facility is completed and occupied (in early 1979), a part of the pristine collection is being stored in vaults in three other buidlings at JSC: B01, B16, and B45. (Samples can be gotten from these vaults for allocation, but the restriction of visits to about twice a year results in considerable delay.)

The following are rooms in building 31 where all of the Curatorial laboratories are located. 188 is the Thin Section Laboratory (TSL); 262 is the Thin Section Library, where the sections may be studied and photographed. 262 is also the sample shipping and receiving area - the Sample Control Center (SCC); 264 through 275 are rooms in the Sample Storage and Processing Laboratory (SSPL) for pristine samples, which are stored and processed in nitrogen atmosphere cabinets. 313 and 314 are storage areas for samples returned by PI's and other samples such as epoxy impregnated ones and those obtained by Freon flushing for which pristine storage in nitrogen is inapprorpiate.

The next page is a list of some of the abbreviations used in the Description field.

ABBREVIATIONS FOR THE DESCRIPTION FIELD OF THE COMPUTER INVENTORY

A	Angular
ADJ	Adjacent
AN	Anorthosite
B	Black
BKN	Broken
BL	Blue
BS	Basalt
BS	Bandsaw
BW	Black Clasts and White Matrix
c	About (Circa)
C	Coarse (grained)
CAB	Cabinet
CP	Chip (s)
CD	Coherent
CD	Clod
CL	Clast
CT	Coat (ed)
D	Dark
DOC	Documented
EX	Exterior (chip)
F	Fine (grained)
FG	Fragment
FI	Fines
FL	Floor
FR	Friable
G	Gray
GB	Gabbro
GL	Glass (y)
GR	Green
GRP	Grout
I	Incoherent
IN	Interior (chip)
L	Light
LOC	Located
MA	Matrix
PC	Piece
PB	Potted butt
PM	Probe Mount
PTS	Polished Thin Section
R	Rounded
SL	Soil
SP	Sphere
SPL	Spillage
SWP	Sweeping
TS	Thin Section
UDOC	Undocumented
V	Very
VG	Vug (gy)
VS	Vesicular
VT	Vitrophyre
W	White
WB	White clasts in black matrix
WS	Wire saw
XL	Crystalline
+	And

NASA-JSC