

10073

Sample 10073 is a rounded medium dark grey microbreccia. This sample originally weighed 125 gm, and measured 5 x 3 x 2 cm. It was originally returned in ALSRC #1004 (Documented Sample container).

BINOCULAR DESCRIPTION

BY: Twedell

DATE: 2/27/76

ROCK TYPE: Microbreccia

SAMPLE: 10073,1

WEIGHT: 68.0 gm

COLOR: Medium dark grey

DIMENSIONS: Four subequal pieces

SHAPE: Rounded

COHERENCE: Intergranular - Friable

Fracturing - Few, non-penetrative

FABRIC/TEXTURE: Anisotropic/Microbreccia

VARIABILITY: Homogeneous

SURFACE: Smooth and rounded on exposed (pitted) surfaces, to angular on fresh surfaces.

ZAP PITS: Few on T₁ face of largest piece. None on any other pieces.

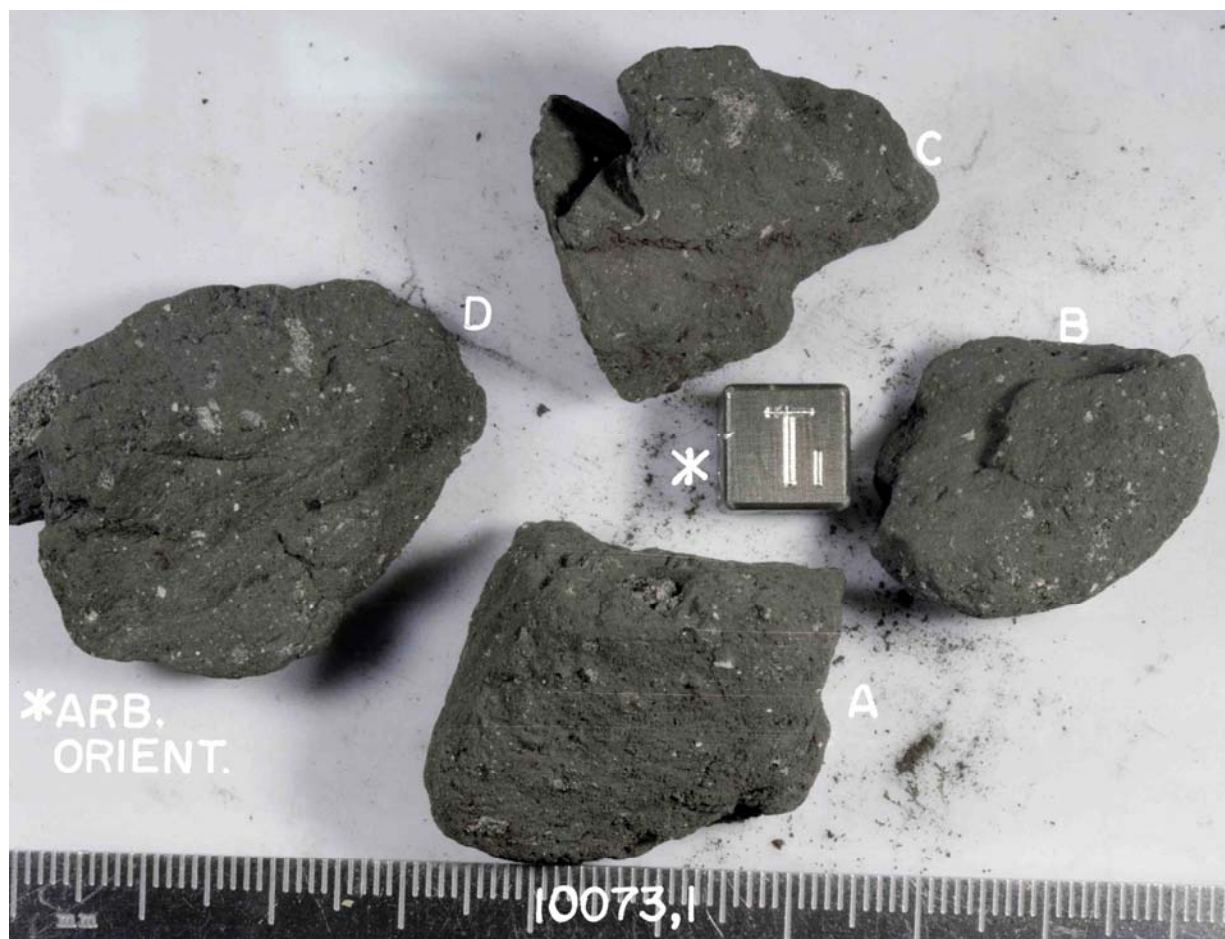
Pits are glass lined up to 1.2mm in diameter.

CAVITIES: Absent

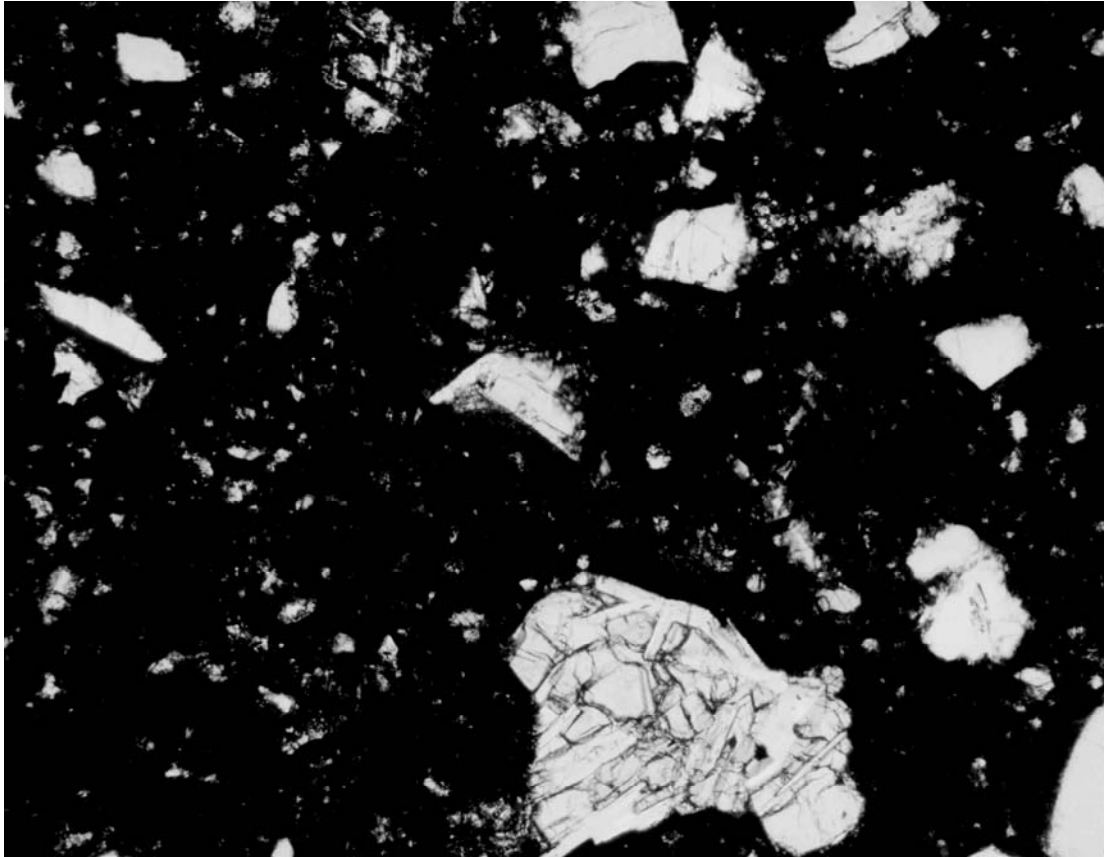
<u>COMPONENT</u>	<u>COLOR</u>	<u>% OF ROCK</u>	<u>SHAPE</u>	<u>SIZE(MM) DOM. RANGE</u>	
Matrix	DkGrey	98	-----	----	----
WhiteClast	White	<1	Sub-angular	0.9	0.2-1.0
Basalt Clast	HoneyBrown Black/White	1	Sub-rounded	1.0	0.6-3.0
Salt/Pepper Clast	Black/White	<1	Sub-rounded	0.8	0.4-1.5



10073,0 Original PET Photo S-69-47290



10073,1 S-76-22596



S-76-26294

SECTION: 10073,27

Width of Field 1.39 mm plane light

THIN SECTION DESCRIPTION

BY: Walton

DATE: 6/29/76

SUMMARY: Partly devitrified typical breccia with a low lithic clast content.

Approximately one quarter of the section has a light brown matrix while the remainder of the section has a dark brown matrix. There is a higher concentration of mineral clasts in the lighter brown matrix than the darker.

MATRIX 58% OF ROCK

<u>PHASE</u>	<u>%SECTION</u>	<u>SHAPE</u>	<u>SIZE (MM)</u>	<u>COMMENTS:</u>
Dark Brown	75	--	<0.001	High glass content: light brown
Light Brown	25	--	<0.001	has higher mineral clast content.

MINERAL CLASTS 29% OF ROCK

<u>PHASE</u>	<u>RELATIVE ABUNDANCE</u>	<u>SHAPE</u>	<u>SIZE (MM)</u>
Pyroxene ₁	Very abundant	Angular to irregular	0.001-0.6

Plagioclase ₂	Moderate	Blocky to irregular	0.001-0.4
Opaques ₃	Few	Blocky to skeletal	0.001-0.4

- 1) Strained fragments; poor optical characteristics
- 2) Locally abundant; not evenly distributed
- 3) Large blocky fragments; crystal more skeletal in clasts

LITHIC CLASTS 8% OF ROCK

<u>TYPE</u>	<u>RELATIVE ABUNDANCE</u>	<u>SHAPE</u>	<u>SIZE(MM)</u>
Small	Very abundant	Rounded to irregular	0.001-1.0
Large ₄	Six present	Rounded to irregular	>1.0

- 4) a. Fine-grained glass-rich matrix with mineral and rock fragments.
- b. Coarse-grained basalt consisting of pyroxene, plagioclase and ilmenite.
- c. Fine-grained glass-rich matrix with mineral and rock fragments.
- d. Glass-rich matrix enclosing small crystallites of pyroxene and plagioclase.
- e. Coarse-grained basalt which appears to have been crushed. Mineral identification difficult.
- f. Fine-grained mineral aggregate of pyroxene and plagioclase with some glass in the matrix.

GLASS CLASTS 5% OF ROCK

<u>TYPE</u>	<u>RELATIVE ABUNDANCE</u>	<u>SHAPE</u>	<u>SIZE(MM)</u>
Yellow-Orange ₅	Very abundant	Irregular to spherical	0.001-0.5
Pale Yellow- White ₆	Moderate	Spherical to irregular	0.001-0.8

- 5) Most angular shards; few spheres
- 6) Several spheres; more devitrification than other type glass.

Selected References: Fredriksson et al. (1970).

HISTORY AND PRESENT STATUS OF SAMPLES 6/29/76

10073 was removed from the Documented Sample container (ALSRC # 1004) and split in the Vac Lab. Remaining pristine samples were re-examined in SSPL.10073

PRISTINE SAMPLES: (All VAC-SSPL)

- | | | |
|---|----------|---|
| 1 | 68.40 gm | Four pieces. Few pits on one piece; None on others. |
| 2 | 10.90 gm | Chips and fines. |

NO RETURNED SAMPLES

CHEMICAL ANALYSES

Element	Number of Analyses	Mean	Units	Range
SiO ₂	1	43.85	PCT	0
Al ₂ O ₃	2	13.98	PCT	.38
TiO ₂	1	8.17	PCT	0
FeO	1	16.21	PCT	0
MnO	2	.223	PCT	.039
MgO	1	7.79	PCT	0
CaO	1	12.45	PCT	0
Na ₂ O	3	.459	PCT	.038
K ₂ O	2	.144	PCT	.0001
Li	1	11.0	PPM	0
Rb	3	2.61	PPM	.79
Cs	1	.098	PPM	0
Be	1	2.10	PPM	0
Sr	2	163.75	PPM	7.5
Ba	2	207.5	PPM	65.0
Sc	2	63.0	PPM	2.0
V	2	74.0	PPM	16.0
Cr ₂ O ₃	2	.309	PCT	.063
Co	2	30.05	PPM	2.10
Ni	1	199	PPM	0
Cu	2	16.5	PPM	5.0
Zn	1	23	PPM	0
Y	1	89	PPM	0
Zr	1	322.0	PPM	0
Nb	1	14.0	PPM	0
Ag	1	.163	PPM	0
Ta	1	1.6	PPM	0
Hf	1	8.9	PPM	0
La	2	16.9	PPM	8.2
Ce	2	47.25	PPM	1.50
Nd	1	35.4	PPM	0
Sm	2	11.95	PPM	.9
Eu	2	1.65	PPM	.1
Gd	1	15.9	PPM	0
Dy	1	18.3	PPM	0
Ho	1	5.0	PPM	0
Er	1	11.4	PPM	0
Yb	2	9.15	PPM	3.9
Lu	2	1.66	PPM	.2
U	1	.45	PPM	0
Ga	1	3.70	PPM	0
0	1	41.40	PCT	0

Analysts: Ehmann & Morgan, (1970); Goles et al., (1970); Ansell & Helz, (1970); Gast et al., (1970); Gibson & Johnson, (1971); Ganapathy et al., (1970).

No Age References