

# 10070

Sample 10070 is a subangular, dark grey, fine breccia. This sample originally weighed 64 gm. and measured 5.7 x 3.2 x 3.2cm. It was originally returned in ALSRC #1004 (Documented Sample Container).

BINOCULAR DESCRIPTIONS

BY: Kramer

DATE: 12-5-75

ROCK TYPE: Fine Breccia\*

SAMPLE: 10070,4

WEIGHT: 38.15 gm

COLOR: Dark Grey

DIMENSIONS: 5 x 3 x 2 cm

SHAPE: Subangular

COHERENCE: Intergranular - moderately friable  
Fracturing - absent

FABRIC/TEXTURE: Anisotropic/Fine Breccia

VARIABILITY: Homogeneous

SURFACE: Irregular

ZAP PITS: N<sub>1</sub> & S<sub>1</sub> - many, others none.

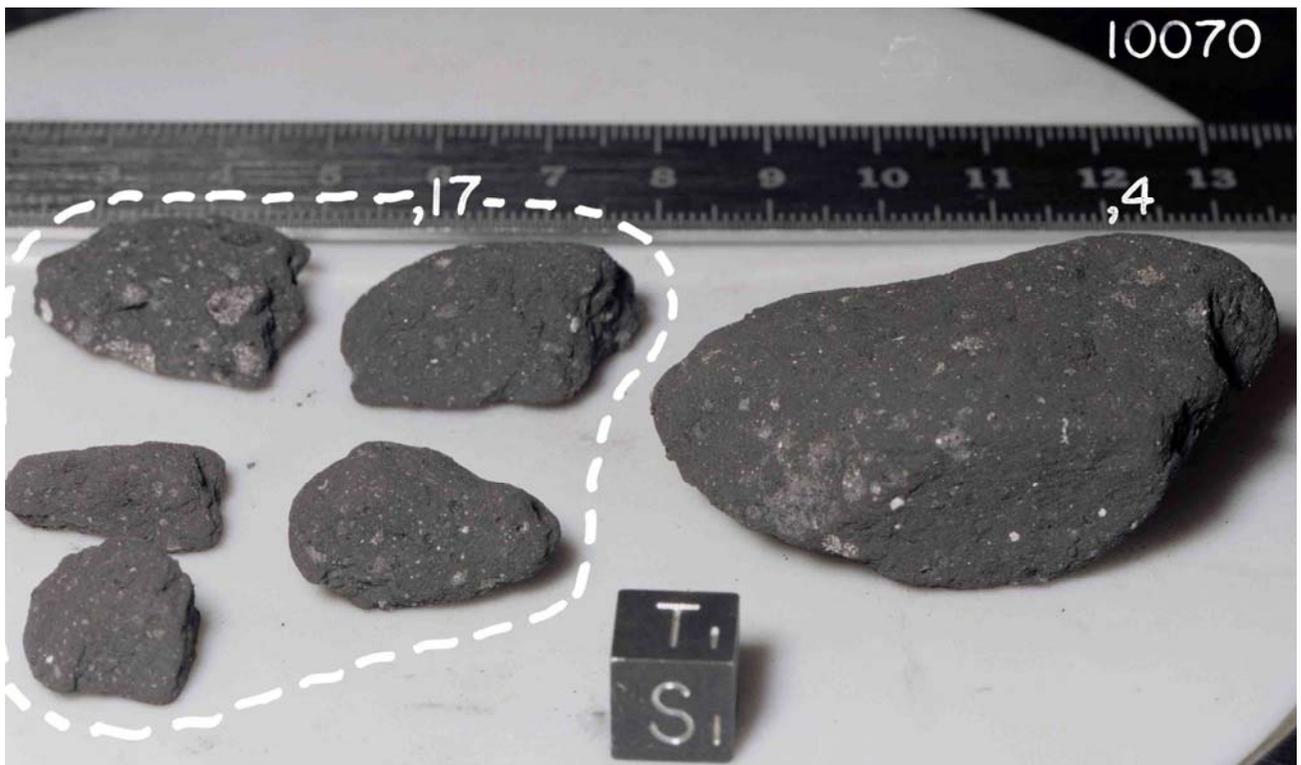
CAVITIES: Absent

<u>COMPONENT</u>	<u>COLOR</u>	<u>%OF ROCK</u>	<u>SHAPE</u>	<u>(SIZE MM) DOM. RANGE</u>	
Matrix	Dk.Grey	88	----	----	----
Basalt Clast	Lt.Grey	2	Subrounded	2.0	0.5-2.3
Grey Clast	Med.Grey	2	Subrounded	1.5	0.5-5.0
Salt & Pepper Clast	Blk & White	2	Subrounded	2.0	0.05-2.5
Glass Spherules	Black	2	Round	.25	0.01-1.2
White Clast	White	2	Angular to Subrounded	1.0	0.01-1.5
Brown Clast	Brown	2	Angular to Subrounded	1.0	.01-1.5

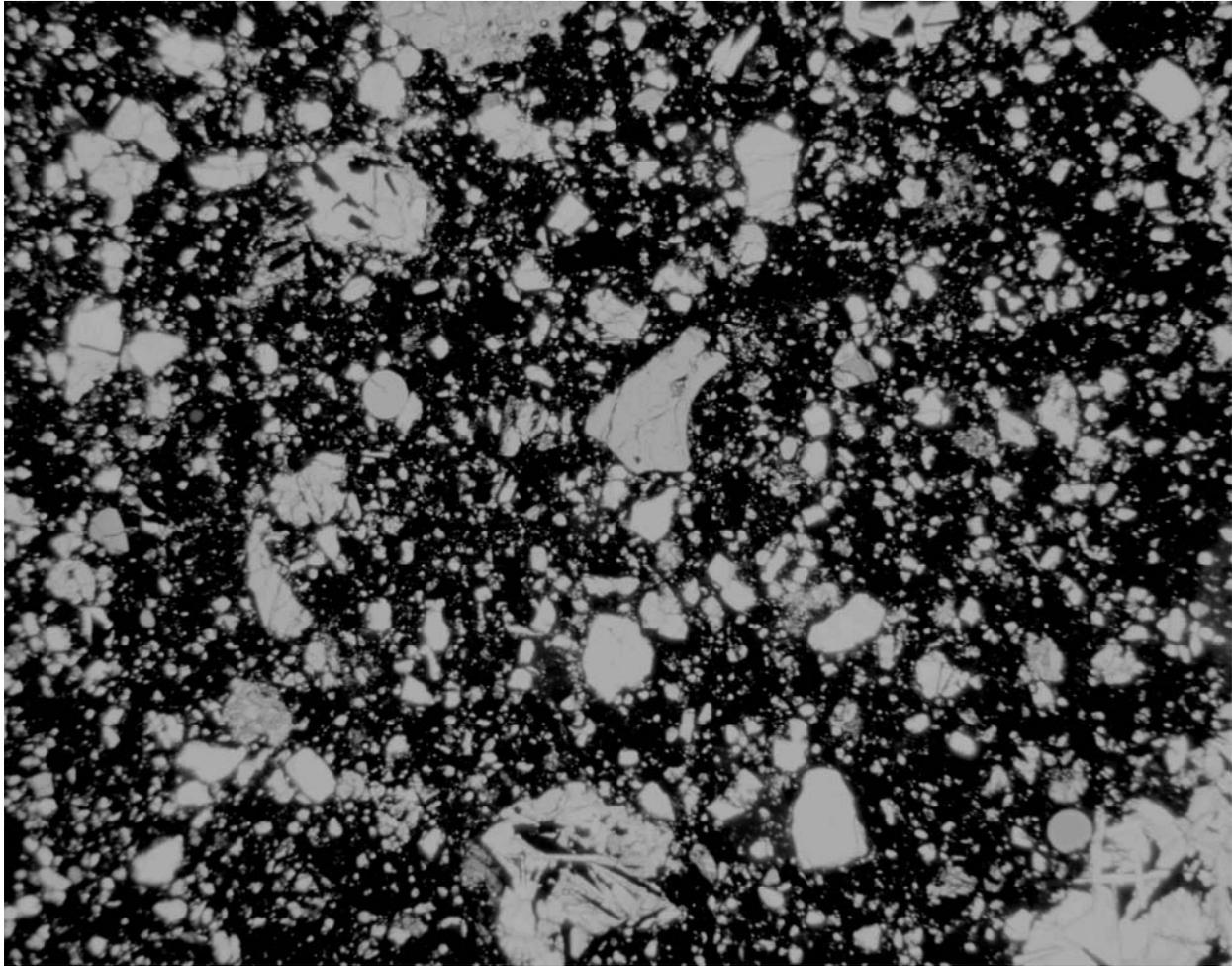
\*Original PET description of 10070,2 (3.82 gm) was apparently done on a mislabeled sample. The description of 10070 was done on a basalt fragment. This was discovered during re-examination of the sample.



10070,0 Original PET Photo S-69-47311



10070,4,17 S-75-34246



S-76-26308

SECTION: 10070,22

Width of field: 2.72 mm Plane light

THIN SECTION DESCRIPTION

BY: Walton

DATE: 6-25-76

SECTION: 10070,22

SUMMARY: Partly devitrified typical breccia with many small lithic clasts but very few large clasts. Many of the mineral fragments are crushed and highly fractured.

Matrix 55% of Rock

<u>PHASE</u>	<u>% OF SECTION</u>	<u>SHAPE</u>	<u>SIZE (MM)</u>	<u>COMMENTS:</u>
Dark Brown	100%	-	<0.001	High glass content; some devitrification.

Mineral Clasts 29% of Rock

<u>Phase</u>	<u>Relative Abundance</u>	<u>Shape</u>	<u>Size (mm)</u>
Pyroxene <sub>1</sub>	Very Abundant	Angular to irregular	0.001-0.2

Plagioclase <sub>2</sub>	Present	Blocky to irregular	0.001-0.2
Opagues <sub>3</sub>	Few	Rounded to euhedral	0.001-0.2

- 1) Some grains show twinning, exsolution and fair cleavage development.
- 2) Many polygranulated, fair to poor twinning, others no twinning visible.
- 3) Several small euhedral crystals and rounded fragments in matrix; many larger crystals in clasts.

Lithic Clasts 18% 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 <sub>4</sub>	One Present	Irregular	>1.0

- 4) a. Coarse-grained basalt with large plagioclase crystals (many with glass inclusions), pyroxene crystals (some with olivine inclusions) and ilmenite.

Glass Clasts 5% of Rock

<u>Type</u>	<u>Relative Abundance</u>	<u>Shape</u>	<u>Size (mm)</u>
Yellow-Orange	Very abundant	Irregular to spherical	0.001-0.9

- 5) Apparently half spheres or part spheres and half angular shards; some devitrification and bubbles.

HISTORY AND PRESENT STATUS OF SAMPLES 6-28-76

10070 was removed from the Documented Sample container (ALSRC # 1004) and split in the Vac Lab. A chip was sent to PCTL where a mix-up occurred. The chip described in PCTL (10070,2) was a basalt chip and this description appeared in the first catalogue (1969). The discrepancy was discovered during re-examination in RSPL. Remaining pristine subsamples were re-examined in SSPL.

PRISTINE SAMPLES

4	38.15 gm	Large surface piece. N <sub>1</sub> & S <sub>1</sub> are pitted. Other surfaces are fresh.
17	20.28 gm	Five surface chips. All have one pitted surface.
18	9.64 gm	Chips and fines. Largest chip is about 1/2 gm.

RETURNED SAMPLES – None

CHEMICAL ANALYSES

<u>Element</u>	<u>Number of Analyses</u>	<u>Mean</u>	<u>Units</u>	<u>Range</u>
SiO <sub>2</sub>	1	44.07	PCT	0
Al <sub>2</sub> O <sub>3</sub>	2	13.80	PCT	.75
TiO <sub>2</sub>	1	8.34	PCT	0
FeO	1	16.21	PCT	0
MnO	1	.196	PCT	0
MgO	1	8.62	PCT	0
CaO	1	12.31	PCT	0
Na <sub>2</sub> O	1	.504	PCT	0
Ba	1	310.0	PPM	0
Sc	1	57.4	PPM	0
V	1	82.0	PPM	0
Cr <sub>2</sub> O <sub>3</sub>	1	.272	PPM	0
Co	1	37.3	PPM	0
Cu	1	12.0	PPM	0
Zr	1	360.0	PPM	0
Ta	1	1.0	PPM	0
Hf	1	12.8	PPM	0
La	2	16.85	PPM	0
Ce	1	56.0	PPM	0
Sm	1	13.1	PPM	0
Eu	1	1.74	PPM	0
Tb	1	3.10	PPM	0
Ho	1	5.80	PPM	0
Yb	1	14.0	PPM	0
Lu	1	1.80	PPM	0
U	1	.62	PPM	0
O	1	43.40	PCT	0

Analysts: Ehmann & Morgan, (1970); Goles et al., (1970).

Age References: Eberhardt (1971b).