

10067

Sample 10067 is a sub-angular, dark grey microbreccia. This sample originally weighed 69 gms and measured 5 x 3 x 3 cm. It was originally returned in ALSRC #1004 (Documented Sample Container)

BINOCULAR DESCRIPTION BY: Kramer DATE: 1-28-76
 ROCK TYPE: Microbreccia SAMPLE: 10067,3 WEIGHT: 46.83gm
 COLOR: Dark Grey DIMENSIONS: 4 x 3 x 3 cm
 SHAPE: Sub-angular (broken)
 COHERENCE: Intergranular - Coherent
 Fracturing - Few, non-penetrative
 FABRIC/TEXTURE: Anisotropic/Microbreccia
 VARIABILITY: Homogeneous
 SURFACE: All faces irregular; rough and knobby (PET)
 ZAP PITS: Few on all but B₁. B₁ has none.
 CAVITIES: Absent

<u>COMPONENT</u>	<u>COLOR</u>	<u>% OF ROCK</u>	<u>SHAPE</u>	<u>SIZE (MM) DOM. RANGE</u>	
Matrix	DarkGrey	81	-----	-----	
Basalt Clast	Lt. Grey	5	Sub-angular	1.0	.5-3.5
Salt & Pepper Clast	Lt.Grey	3	Sub-angular	.8	.1-2.5
Grey Clast	Med.Grey	2	Sub-rounded	.8	.1-1.5
White Clast	White	7	Angular to sub-rounded	.5	.05-1.5
Black Clast ₂	Black	1	Sub-angular	2	.5-2.5
Brown Clast	Brown	<1	Sub-rounded	1.5	.1-3.0

1) Appears to be a glass-rich clast.

Special Features: Glassy spatter (1 cm²) on W₁.



10067,0 Original PET Photo S-69-46643



10067,3 S-76-21923



S-70-49221

SECTION: 10067,10

Width of field 2.72 mm plane light

THIN SECTION DESCRIPTION

BY: Walton

DATE: 6-25-76

SUMMARY: Partly devitrified breccia with a relatively low glass clast content. Most of the lithic clasts are small and well rounded. No really large clasts are present in the section.

MATRIX 62% OF ROCK

<u>TYPE</u>	<u>% SECTION</u>	<u>SHAPE</u>	<u>SIZE(MM)</u>	<u>COMMENTS:</u>
Dark Brown	100	----	<0.001	High glass content: not a well defined phase

MINERAL CLASTS 26% OF ROCK

<u>PHASE</u>	<u>RELATIVE ABUNDANCE</u>	<u>SHAPE</u>	<u>SIZE(MM)</u>
Pyroxene ₁	Very Abundant	Angular to irregular	0.001-0.5
Plagioclase ₂	Few	Blocky to irregular	0.001-0.3
Opaques ₃	Few	Angular to skeletal	0.001-0.3

- 1) Most as angular shards with poor optical characteristics
- 2) Blocky crystals with fair to poor twinning
- 3) Mostly in clasts; some isolated shards

LITHIC CLASTS 10% 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	One present	irregular	> 1.0

- 4) Coarse-grained basalt consisting of pyroxene, plagioclase and ilmenite.

GLASS CLASTS 2% OF ROCK

<u>TYPE</u>	<u>RELATIVE ABUNDANCE</u>	<u>SHAPE</u>	<u>SIZE(MM)</u>
Yellow-Orange ₅	Very abundant	angular to spherical	0.001-0.3
Colorless ₆	Few	angular	0.001-0.2

- 1) Many small spheres; most large pieces shards; some with partial devitrification
- 6) All shards; some bubbles

Selected References: Carter and MacGregor (1970), Keil et al. (1970).

HISTORY AND PRESENT STATUS OF SAMPLES - 6/25/76

10067 was removed from the Documented Sample container (ALSRC I004) and split in the Vac Lab. Pristine samples were re-examined in SSPL.

<u>PRISTINE SAMPLES:</u>		(All VAC-SSPL)
3	46.83 gm	Piece. Pitted on five surfaces.
12	0.93 gm	Chips and fines. Some chips have pitted surface.
<u>RETURNED SAMPLES:</u>		
9001	7.97 gm	Two chips. Larger chip is pitted on one surface. Smaller chip has no pits.

CHEMICAL ANALYSES

<u>Element</u>	<u>Number of Analyses</u>	<u>Mean</u>	<u>Units</u>	<u>Range</u>
SiO ₂	1	44.07	PCT	0
Al ₂ O ₃	2	13.80	PCT	0
TiO ₂	1	8.84	PCT	0
FeO	1	17.88	PCT	0
MnO	1	.235	PCT	0
MgO	2	10.11	PCT	3.65
CaO	1	12.17	PCT	0
Na ₂ O	1	.484	PCT	0
Sc	1	66.00	PPM	0
V	1	71.0	PPM	0
Co	1	35.90	PPM	0
Ta	1	2.10	PPM	0
Hf	1	15.40	PPM	0
La	1	20.10	PPM	0
Ce	1	68.10	PPM	0
Sm	1	16.70	PPM	0
Eu	1	2.40	PPM	0
Tb	1	3.10	PPM	0
Ho	1	7.50	PPM	0
Yb	1	13.8	PPM	0
Lu	1	2.2	PPM	0
U	1	.54	PPM	0
O	1	41.6	PCT	0

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

No Age References