

15206

MELTED REGOLITH BRECCIA

ST. 2

92.0 g

INTRODUCTION: 15206 is a vesicular glassy breccia (Fig. 1) containing KREEP basalt clasts and some mare basalt (at least pyroxene-phyric) clasts. The clasts are shocked and penetrated by glass. 15206 is medium gray, blocky, and angular. It has extreme variations in vesicularity and banding, with clasts locally concentrated. It is tough; zap pits occur on only one surface. 15206 was chipped from the same boulder as 15205 (Fig. 15205-2), and appears to be a shock-melted version of that sample. Its collection was documented.



Fig. 1a



Fig. 1b

Figure 1.

- a) Pre-saw view of 15206. Broken face to left, lunar exposed to right. S-71-46057;
b) sawn face of 15206,0. Broken face to bottom, lunar exposed to top. S-74-33198

PETROLOGY: 15206 is very dark and vesicular with a glassy matrix, and is rather agglutinitic in appearance (Fig. 2). It contains abundant clasts of Apollo 15 KREEP basalts with rare pyroxenephric mare basalts. All the clasts are shocked and some are melted, and are penetrated by dark brown glass fissures. Dymek et al. (1974) noted that it was similar to 15205 except that it had been affected by later impact events with in situ vesiculation and melting. Wilshire and Moore (1974) noted that it differs from 15205 in its extensive fusion; there is no distinguishable contact between glass selvage and partly fused interior of the rock as is so clearly evident on 15205. The selvage is defined by an increase in the size and abundance of cavities towards the original surface of the boulder. The cavity distribution also indicates that the boulder was isolated from any surrounding rock before the glass had congealed.

CHEMISTRY: The limited chemical data (Table 1) show that 15206 is very similar to 15205 for those elements measured, and thus probably consists predominantly of Apollo 15 KREEP basalts.

COSMOGENIC RADIONUCLIDES AND EXPOSURE: Keith et al. (1972) and Rancitelli et al. (1972) provided disintegration count data for cosmogenic radionuclides. The data is similar to that for 15205, indicating that ^{26}Al is unsaturated and ^{22}Na is saturated, and that the boulder moved to its present location less than 1 m.y. ago. The ^{26}Al non-saturation was confirmed by the analysis of the data by Yokoyama et al. (1974).

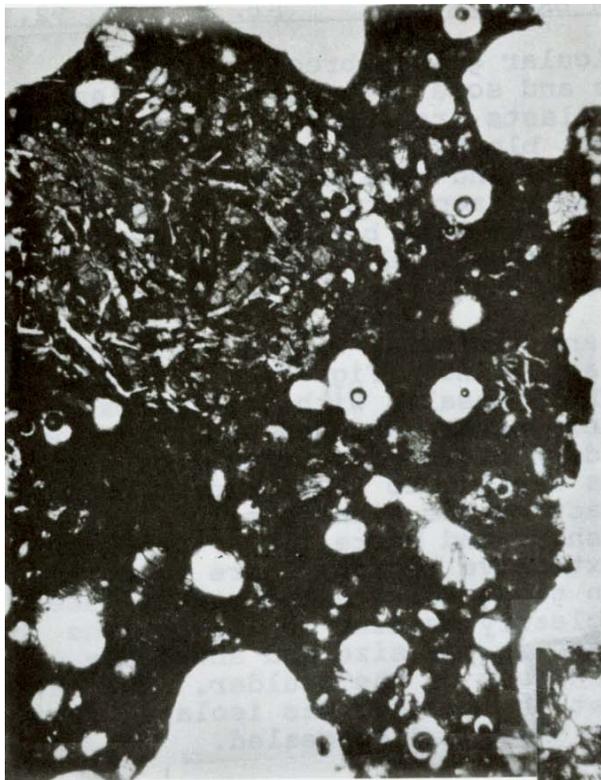


Fig. 2a



Fig. 2b

Figure 2. Photomicrographs of 15206. Transmitted light. Widths about 1.25 mm.
a) 15206,5. Vesicular glassy breccia with KREEP basalt clasts;
b) 15206,33. Vesicular but less glassy portion than 15206,5,
more like relict 15205, but still substantially molten.

PROCESSING AND SUBDIVISIONS: ,1 was chipped off the "W" top corner and largely used up in making thin sections ,3 through ,8. Subsequently the sample was sawn (Figs. 1, 3) to produce a series of slabets. Potted butts ,14 and ,15 were made from part of ,11 and partly used to make thin sections ,29 through ,34. All allocations were made from these pieces. ,0 is now 55.89 g.

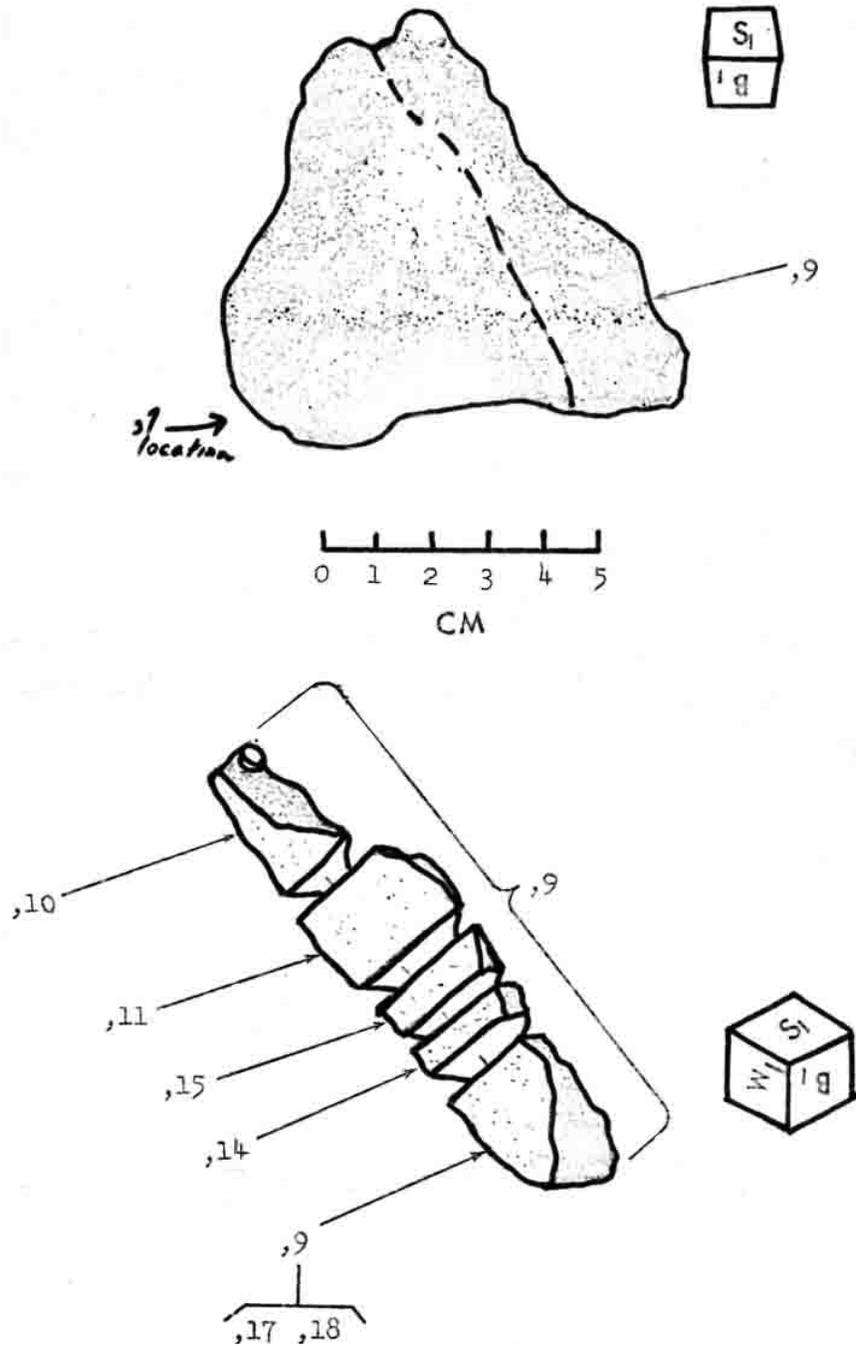


Figure 3. Sawing of 15206.

TABLE 15206-1. Chemical analyses

		,0	,0	,17
Wt %	SiO ₂			
	TiO ₂			
	Al ₂ O ₃			
	FeO			
	MgO			
	CaO			
	Na ₂ O			
	K ₂ O	0.584	0.598	
	P ₂ O ₅			
	(ppm)	Sc		
V				
Cr				
Mn				
Co				
Ni				
Pb				
Sr				
Y				
Zr				
Nb				
Hf				
Ba				
Th		12.0	12.4	
U		3.2	3.22	4.9
Pb				
La				
Ce				
Pr				
Nd				
Sm				
Eu				
Gd				
Tb				
Dy				
Ho				
Er				
Tm				
Yb				
Lu				
Li				21
Be				
B				
C				
N				
S				
F				
Cl			66	
Br			0.51	
Cu				
Zn				
(ppb)	I			2.3(a)
	At			
	Ga			
	Ge			
	As			
	Se			
	Mo			
	Tc			
	Ru			
	Rh			
	Pd			
	Ag			
	Cd			
	In			
	Sn			
	Sb			
	Te			
	Cs			
	Ta			
	W			
	Re			
	Os			
	Ir			
	Pt			
	Au			
	Hg			
	Tl			
Bi				
		(1)	(2)	(3)

References and methods:

- (1) Keith et al. (1972); gamma ray spectroscopy
- (2) Rancitelli et al. (1972); gamma ray spectroscopy
- (3) Reed and Jovanovic (1972);

Notes:

- (a) detected in leach only