

72738
Impact Melt Breccia
23.8 grams

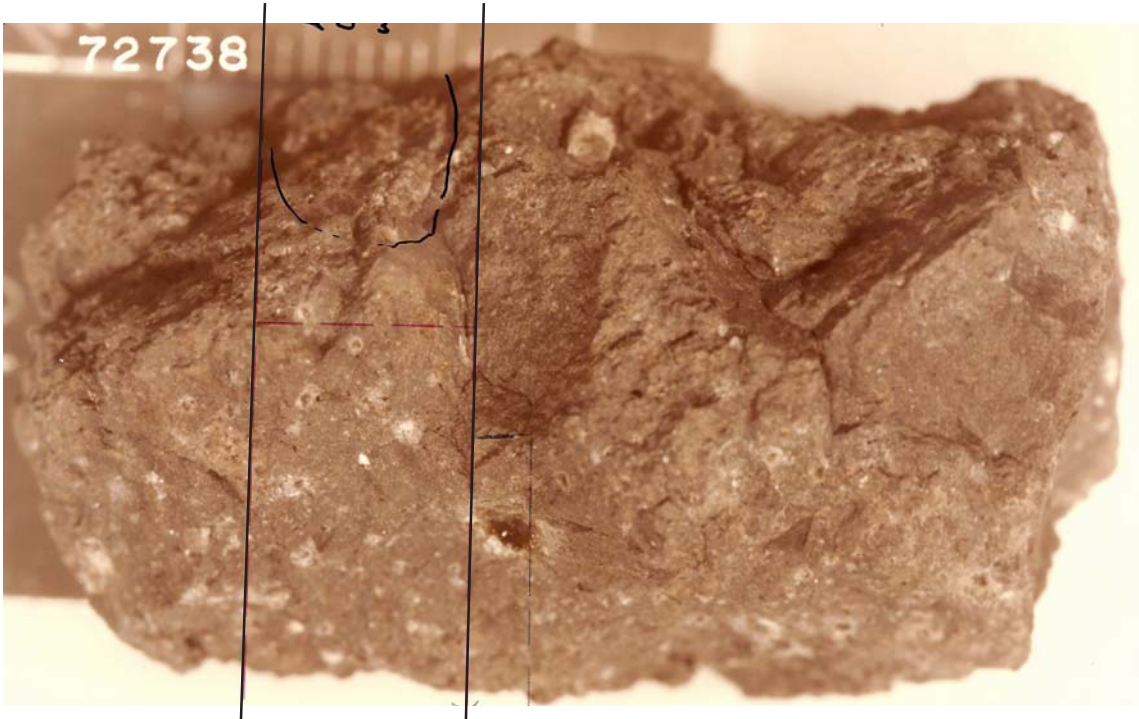


Figure 1: Photo of 72738 showing position of slabs. S73-33454. Slab is 1 cm wide. Note the minislab isolated the zap pit.

Introduction

72738 is an impact melt breccia with a microsubophitic matrix. It has the same chemical composition as other Apollo 17 impact melt breccias.

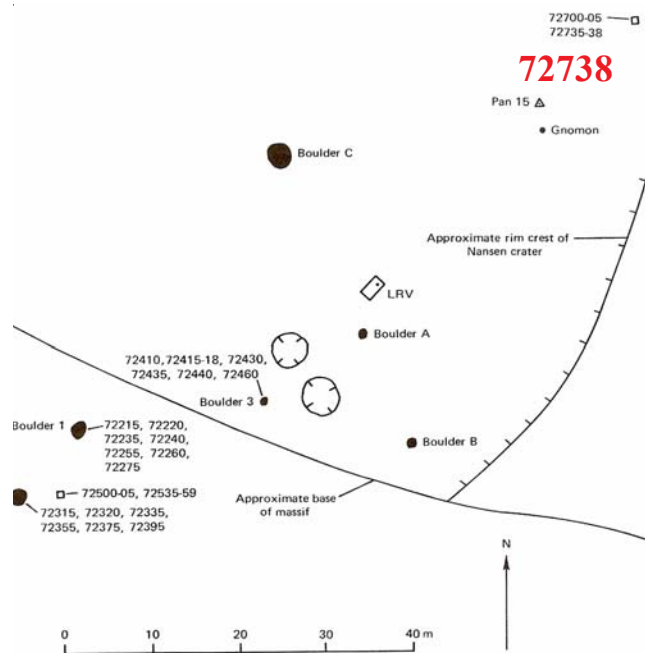
Petrography

The matrix of 72738 is microsubophitic, with abundant plagioclase clasts. Pyroxenes and olivines range in composition (figure 3).

Warner et al. (1978) noted a zircon clast in one of the thin sections.

Chemistry

Murali et al. (1977) determined the chemical composition.



Station 2, Apollo 17

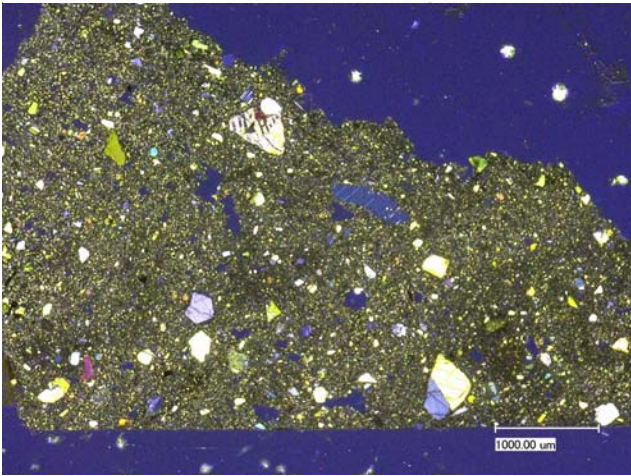
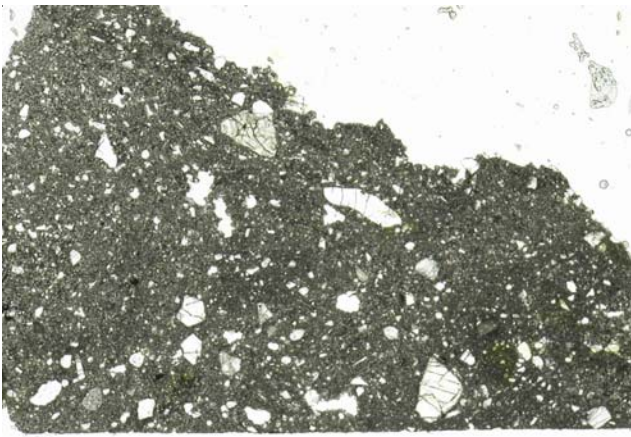


Figure 2: Photographs of thin section 72738,12 by C Meyer @50x.

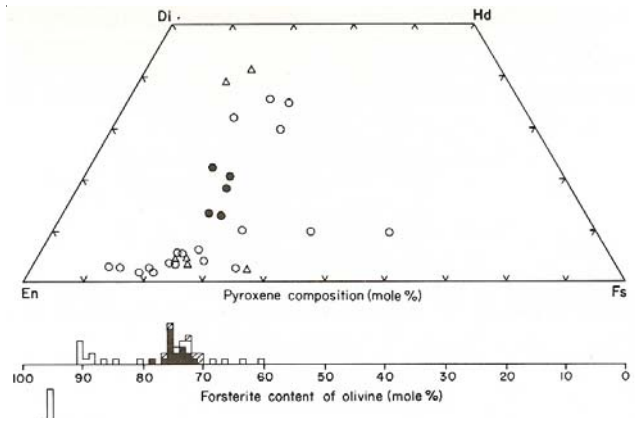
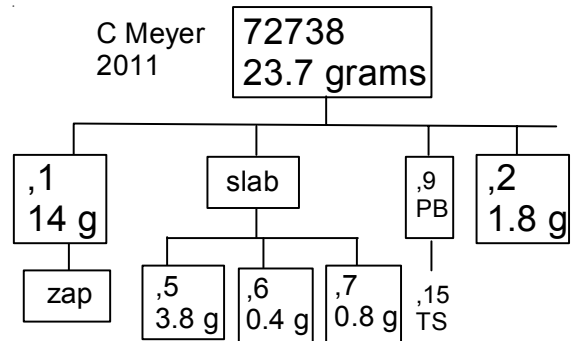


Figure 3: Pyroxene composition in 72738 (Warner et al. 1977).



Processing

72738 has been sawn (figure 4). There are 4 thin sections



Figure 4: Photo of 72738 after cutting slab. S74-20182. Cube is 1 cm.

Table 1. Chemical composition of 72738.

reference weight	Murali77	Warner77		
SiO ₂ %				
TiO ₂	1.3	(a) 1.3	(b)	
Al ₂ O ₃	18.5	(a) 18.5	(b)	
FeO	10.2	(a) 10.2	(b)	
MnO	0.113	(a) 0.11	(b)	
MgO	10	(a) 10	(b)	
CaO	11.3	(a) 11.3	(b)	
Na ₂ O	0.89	(a) 0.89	(b)	
K ₂ O	0.25	(a) 0.25	(b)	
P ₂ O ₅				
S %				
sum				
Sc ppm	17	(a)		
V	40	(a)		
Cr	1204	(a) 1095	(b)	
Co	28	(a)		
Ni	220	(a)		
Cu				
Zn				
Ga				
Ge ppb				
As				
Se				
Rb				
Sr				
Y				
Zr	380	(a)		
Nb				
Mo				
Ru				
Rh				
Pd ppb				
Ag ppb				
Cd ppb				
In ppb				
Sn ppb				
Sb ppb				
Te ppb				
Cs ppm				
Ba	350	(a)		
La	31	(a)		
Ce	70	(a)		
Pr				
Nd				
Sm	12	(a)		
Eu	2.45	(a)		
Gd				
Tb	2.7	(a)		
Dy	15	(a)		
Ho				
Er				
Tm				
Yb	9.1	(a)		
Lu	1.5	(a)		
Hf	10.5	(a)		
Ta	11	(a)		
W ppb				
Re ppb				
Os ppb				
Ir ppb	6	(a)		
Pt ppb				
Au ppb	2	(a)		
Th ppm	3.1	(a)		
U ppm				

technique: (a) INAA, (b) broad beam e. probe

Mineral Mode (Warner et al. 1977)

	Vol. %
Matrix	86.9
Mineral clasts	10.1
Lithic clasts	3
Mineral clasts	
Plagioclase	7.1
Olivine/Pyroxene	2.9
Opaque	tr.
Metal/troilite	9.1
Other	tr.
Lithic Clasts	
ANT	1.6
Devit. Anorthosite	9.4
Breccia	0.5
Other	0.5
Percent of matrix	
Plagioclase	50.8
Olivine/pyroxene	43.9
Opaque	2.4
Metal/troilite	0.2
Other	2.7

References for 72738

Keil K., Dowty E. and Prinz M. (1974) Description, classification and inventory of 113 Apollo 17 rake samples from stations 1A, 2, 7 and 8. Curator's Catalog, pp. 149.

Murali A.V., Ma M.-S., Laul J.C. and Schmitt R.A. (1977a) Chemical composition of breccias, feldspathic basalt and anorthosites from Apollo 15 (15308, 15359, 15382 and 15362), Apollo 16 (60618 and 65785), Apollo 17 (72434, 72536, 72559, 72735, 72738, 78526, and 78527) and Luna 20 (22012 and 22013) (abs). Lunar Sci. VIII, 700-702. Lunar Planetary Institute, Houston.

Ryder G. (1993c) Catalog of Apollo 17 rocks: Stations 2 and 3. Curators Office JSC#26088.

Warner R.D., Taylor G.J. and Keil K. (1977b) Petrology of crystalline matrix breccias from Apollo 17 rake samples. *Proc. 8th Lunar Sci. Conf.* 1987-2006.

Warner R.D., Keil K., Nehru C.E. and Taylor G.J. (1978) Catalogue of Apollo 17 rake samples from Stations 1a, 2, 7, and 8. Spec. Publ. #18, UNM Institute of Meteoritics, Albuquerque. 88 pp.

Wolfe E.W., Bailey N.G., Lucchitta B.K., Muehlberger W.R., Scott D.H., Sutton R.L and Wilshire H.G. (1981) The geologic investigation of the Taurus-Littrow Valley: Apollo 17 Landing Site. US Geol. Survey Prof. Paper, 1080, pp. 280.