

72558
Micropoikilitic Impact Melt Breccia
5.71 grams



Figure 1: Photo of 72558. Scale is marked in mm. S73-19640

Introduction

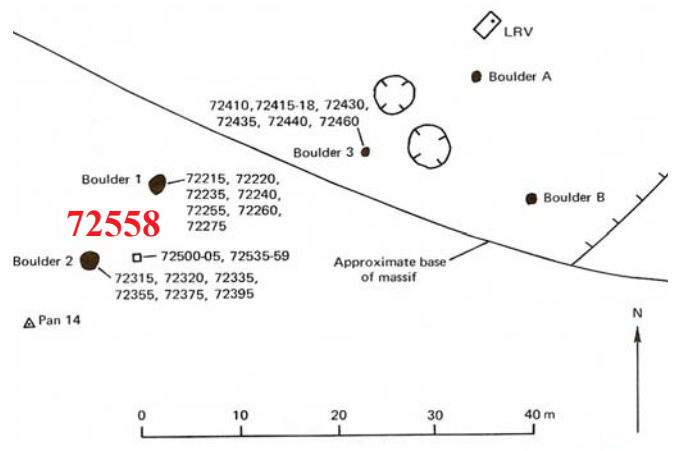
72558 is a clast-bearing impact melt breccia with high trace element content. It has a crystalline matrix with microgranular-micropoikilitic texture, not unlike other rake samples from station 2 on the South Massif (figure 2).

Petrography

The mineral mode and mineral compositions have been reported by Warner et al. (1977). Mineral and lithic clasts are abundant and are of highland material, rather than mare. One plagioclase grain poikilitically encloses several pink spinels.

Chemistry

The trace element content of 72558 is high.



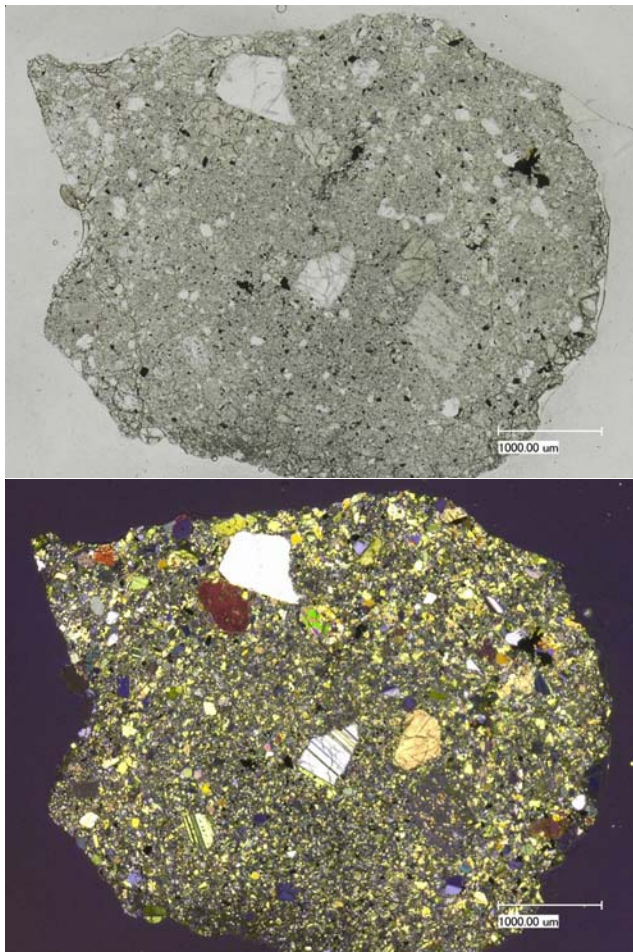


Figure 2a: Photomicrographs of thin section 72558,5 by C Meyer @50x.

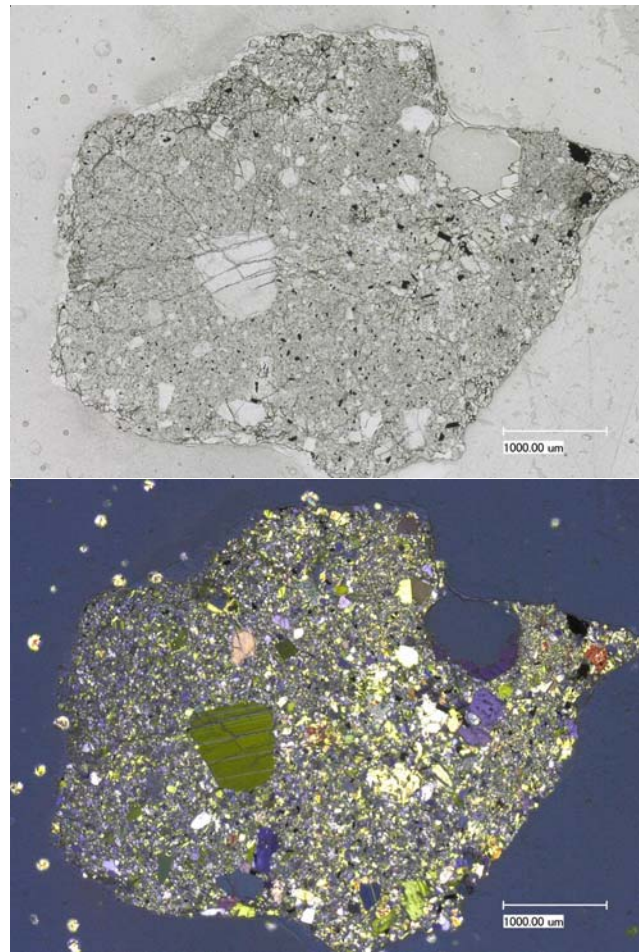


Figure 2b: Photomicrographs of thin section 72558,6 by C Meyer @50x.

Radiogenic age dating

72558 has a poorly defined Ar/Ar plateau as determined by Dalrymple and Ryder (1996)(figure 4).

Processing

There are only two thin sections of this important sample. They should be searched for stray zircons.

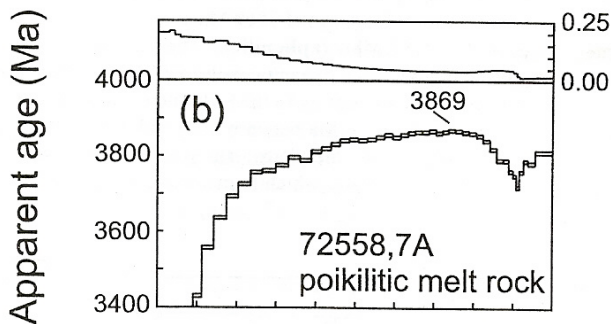


Figure 4: Attempted age measurement by Dalrymple and Ryder (1996).

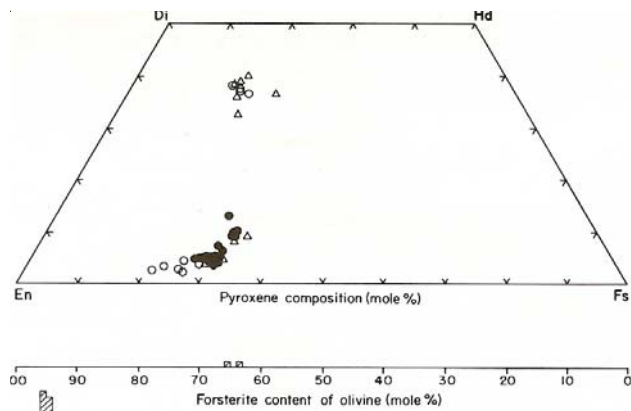


Figure 3: Pyroxene and a few olivine analyses (Warner et al. 1977).

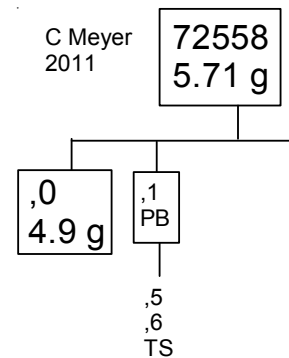
Table 1. Chemical composition of 72558

reference weight	Dalrymple96	Warner77	
SiO2 %	47.2	(c) 50.2	(b)
TiO2	1.6	(c) 0.76	(b)
Al2O3	17.4	(c) 19.4	(b)
FeO	10.6	(a) 8.5	(b)
MnO	0.13	(c) 0.16	(b)
MgO	10.7	(c) 8.7	(b)
CaO	10.7	(c) 11.3	(b)
Na2O	0.68	(a) 0.85	(b)
K2O	0.25	(a) 0.57	(b)
P2O5		0.25	(b)
S %			
sum			
Sc ppm	18.9	(a)	
V			
Cr	1642	(a) 1095	
Co	38	(a)	
Ni	314	(a)	
Cu			
Zn			
Ga			
Ge ppb			
As			
Se			
Rb	10	(a)	
Sr	176	(a)	
Y			
Zr	530	(a)	
Nb			
Mo			
Ru			
Rh			
Pd ppb			
Ag ppb			
Cd ppb			
In ppb			
Sn ppb			
Sb ppb			
Te ppb			
Cs ppm	0.36	(a)	
Ba	434	(a)	
La	40.4	(a)	
Ce	104.2	(a)	
Pr			
Nd	69	(a)	
Sm	18.3	(a)	
Eu	1.89	(a)	
Gd			
Tb	3.8	(a)	
Dy			
Ho			
Er			
Tm			
Yb	13.4	(a)	
Lu	1.9	(a)	
Hf	14.5	(a)	
Ta	1.77	(a)	
W ppb			
Re ppb			
Os ppb			
Ir ppb	8.8	(a)	
Pt ppb	9.8	(a)	
Au ppb			
Th ppm	7.1	(a)	
U ppm	1.88	(a)	

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

Mineral Mode (Warner et al. 1977)

	Vol. %
Matrix	51.9
Mineral clasts	9
Lithic clasts	39.1
Mineral clasts	
Plagioclase	4.8
Olivine/Pyroxene	4.1
Opaque	
Metal/troilite	0.1
Other	
Lithic Clasts	
ANT	38.8
Devit. Anorthosite	0.1
Breccia	
Other	0.2
Percent of matrix	
Plagioclase	53.9
Olivine/pyroxene	40.9
Opaque	1.7
Metal/troilite	0.5
Other	3



References for 72558

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