64548

Dilithic Breccia

8.49 grams

Figure 1: Photo of 64548. Mm scale. S72-55353.

Introduction

64548 is a rake sample (walnut) from the boulder field at station 4 on Stone Mountain – see section on 64501. It is not known if it is local, or if it is part of the ejecta that landed there. It is a fine grain mix of chalky white anorthite and dark aphanitic impact melt (figure 1).

Petrography

Warner et al. (1973) classify 64548 as a "light matrix breccia". However, McKinley et al. (1983) and others realized that 64548 was essentially the same as the sequence 64535, 64546, because of the distinctive light and dark texture and clean boundary between the two lithologies (figure 2).

Ryder and Norman (1980) reported that the matrix was crushed anorthositic material intimately mixed with patches of dark impact melt.

Chemistry

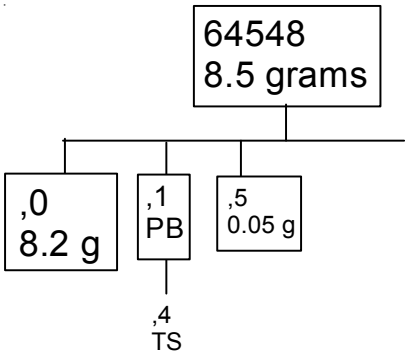
McKinley et al. (1983) and Floran et al. (1976) reported analyses of 64548 (table 1). Ryder and Norman (1980) referred to unpublished analyses by Blanchard (figure 3).

Other Studies

Pearce and Simonds (1974) determined the magnetic properties of 64548 and Gooley et al. (1973) determined the Ni and Co of iron grains and schreibersite.

Processing

There is only one thin section of 64548.



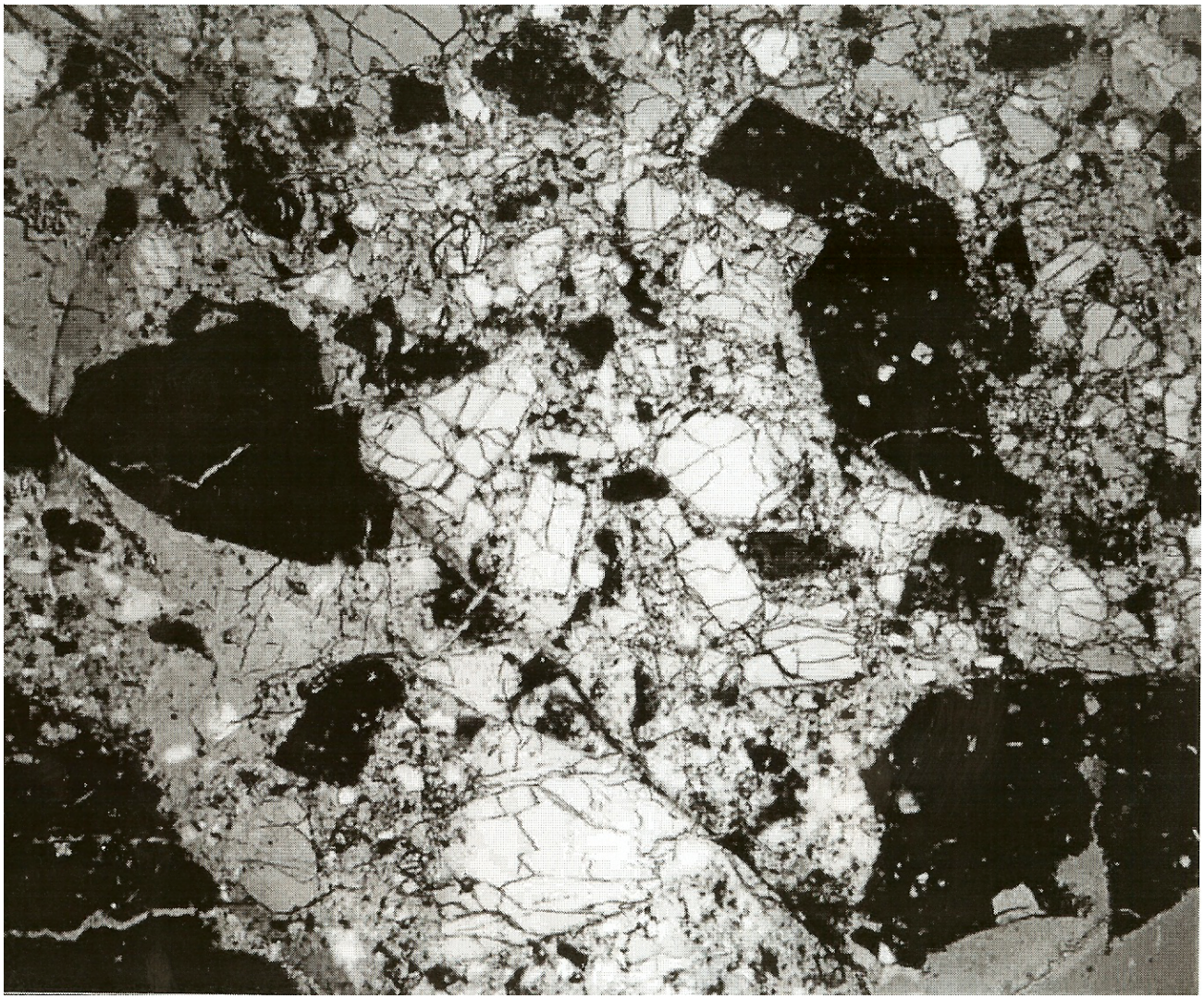


Figure 2: Photomicrograph of thin section 64548,4. Width of field is 2 mm.

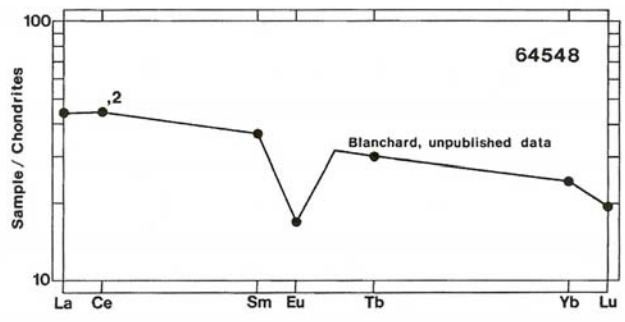


Figure 3: Normalized rare-earth-element diagram for 64548 (Blanchard).

Table 1. Chemical composition of 64548.

reference	Floran76		Blanchard		McKinley83	
weight						
SiO2 %	45.28	(c)			47.6	(a)
TiO2	0.43	(c)			0.88	(a)
Al2O3	27.67	(c)			21.24	(a)
FeO	4.47	(c)			5.9	(a)
MnO					0.09	(a)
MgO	5.67	(c)			10.27	(a)
CaO	15.79	(c)			12.83	(a)
Na2O	0.46	(c)			0.52	(a)
K2O	0.13	(c)			0.27	(a)
P2O5						
S %						
sum						
(a)						
Sc ppm			6.78	(b)		
V						
Cr						
Co			24.5	(b)		
Ni			380	(b)		
Cu						
Zn						
Ga						
Ge ppb						
As						
Se						
Rb						
Sr						
Y						
Zr						
Nb						
Mo						
Ru						
Rh						
Pd ppb						
Ag ppb						
Cd ppb						
In ppb						
Sn ppb						
Sb ppb						
Te ppb						
Cs ppm						
Ba						
La			14.6	(b)		
Ce						
Pr						
Nd						
Sm						
Eu						
Gd						
Tb						
Dy						
Ho						
Er						
Tm						
Yb						
Lu			0.67	(b)		
Hf						
Ta						
W ppb						
Re ppb						
Os ppb						
Ir ppb						
Pt ppb						
Au ppb						
Th ppm						
U ppm						

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

References for 64548

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