

76565 – 11.6 grams

76566 – 2.6 grams

Regolith Breccia



Figure 1: Photo of 76565.0. S73-19644. Clast is 6 mm.

Introduction

76565 and 76566 were collected as rake samples at station 6 on the lower slope of the North Massif. They are fairly coherent regolith breccias, with numerous small clasts of feldspathic material from the highlands and some clasts of mare material from the valley floor.

Petrography

Fruland (1983) and Simon et al. (1990) included 76565 in their study of regolith breccias. The dark matrix is non-porous and is mostly glass, with a few percent mare and highland clasts. . Orange glass is present.

Significant Clast

Warren et al. (1983) studied the white clast, finding that it was non-pristine or badly contaminated by Ir and Au.

Chemistry

Simon et al. (1990), Simonds et al. (1981) and Wiesmann and Hubbard (1976) analyzed 76565. Meyer (1994) claimed that the matrix of 76565 was

Mineralogical Mode for 76565

	(Simon et al. 1990)	
Matrix	20-90 micron	90-100 micron
Mare Basalt	0.4	2.2
Plutonic	0.5	2.5
Granulitic	0.5	1.9
Breccia	0.7	1.9
Olivine	2.4	1
Pyroxene	3.8	1.6
Plagioclase	7.8	5.6
Opaques	1.5	0.3
Glass	4.6	1.9
Agglutinate	1.6	1.5



Figure 2: Photo of 76566. Scale in mm. S73-19639.

the same composition as the adjacent soil (76500).
Warren et al. (1983) analyzed the large white clast.

Processing

There are three thin sections of 76565.

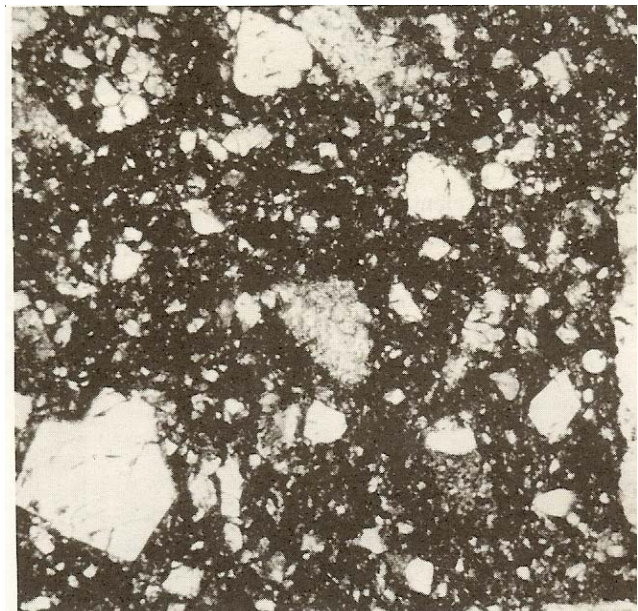


Figure 3: Photomicrograph of thin section of 76565. 2 mm across.

Table 1. Chemical composition of 76565.

reference weight	Simonds81	Simon 90	Warren83 clast	
SiO ₂ %	43.94 (b)		45.37 (a)	
TiO ₂	3.24 (b)	4.57 (a)	0.25 (a)	
Al ₂ O ₃	18.59 (b)	16.1 (a)	26.08 (a)	
FeO	9.57 (b)	12.4 (a)	5.66 (a)	
MnO		0.16 (a)	0.08 (a)	
MgO	10.22 (b)	10.3 (a)	8.13 (a)	
CaO	12.15 (b)	12 (a)	14.56 (a)	
Na ₂ O	0.49 (b)	0.41 (a)	0.35 (a)	
K ₂ O	0.12 (b)	0.09 (a)	0.1 (a)	
P ₂ O ₅				
S %				
sum				
Sc ppm		38.7 (a)	10.9 (a)	
V				
Cr				
Co		30 (a)	33.1 (a)	
Ni		130 (a)	420 (a)	
Cu				
Zn		35 (a)	9.4 (a)	
Ga			3.9 (a)	
Ge ppb			150 (a)	
As				
Se				
Rb		4.7 (a)		
Sr		160 (a)		
Y				
Zr		120 (a)	62 (a)	
Nb				
Mo				
Ru				
Rh				
Pd ppb				
Ag ppb				
Cd ppb				
In ppb				
Sn ppb				
Sb ppb				
Te ppb				
Cs ppm		0.14 (a)	0.22 (a)	
Ba		105 (a)		
La		8.55 (a)	2.71 (a)	
Ce		22.5 (a)	7.1 (a)	
Pr				
Nd		18.7 (a)	3.9 (a)	
Sm		6.04 (a)	1.13 (a)	
Eu		1.38 (a)	0.75 (a)	
Gd		7.4 (a)		
Tb		1.4 (a)	0.3 (a)	
Dy		8.7 (a)	1.91 (a)	
Ho				
Er				
Tm		0.81 (a)		
Yb		4.78 (a)	1.32 (a)	
Lu		0.72 (a)	0.21 (a)	
Hf		5 (a)	1.08 (a)	
Ta		0.86 (a)	0.16 (a)	
W ppb				
Re ppb				
Os ppb				
Ir ppb		4.5 (a)	20 (a)	
Pt ppb				
Au ppb		2 (a)	7.2 (a)	
Th ppm		1.12 (a)	0.72 (a)	
U ppm		0.32 (a)	0.21 (a)	

technique: (a) INAA, (b) fused-bead e. probe

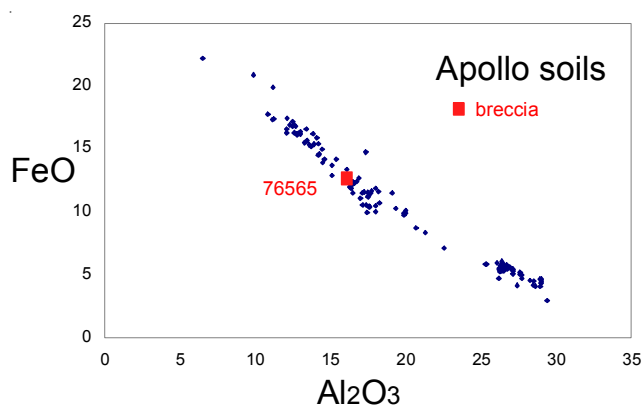


Figure 4: Composition of 76565 compared with lunar soils.

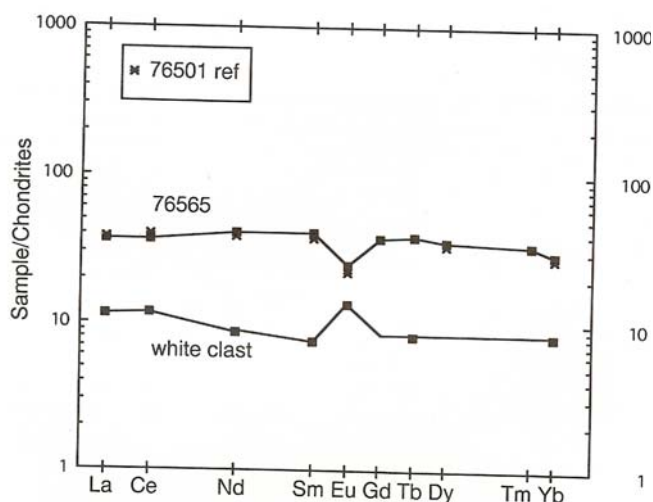
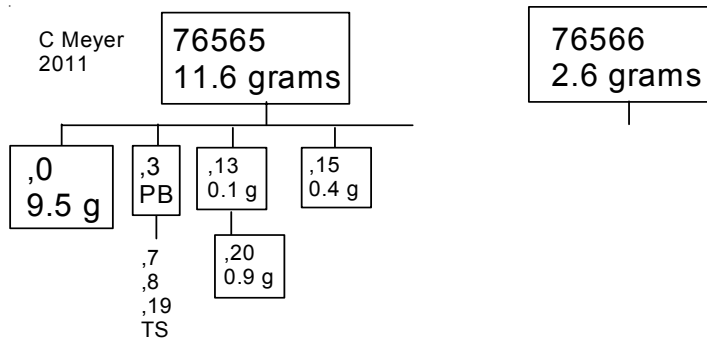


Figure 5: Normalized rare-earth-element diagram for matrix and clast in 76565.



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