74246

Unusual Breccia

28.8 grams

Figure 1: Photo of 74246. Scale in cm.

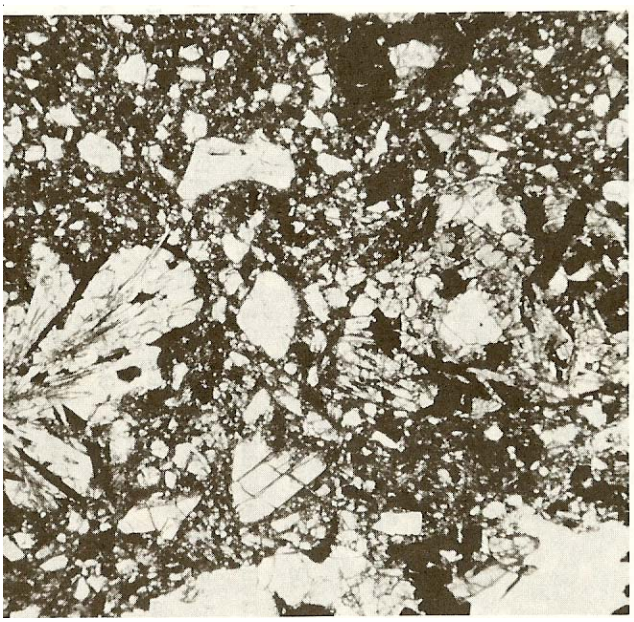

Figure 2: Photomicrograph of thn section of 74246. Field of view is 2 mm.

Introduction

74246 was found as a large particle in the trench samples from the rim of Shorty Crater – see section on 74220.

Petrography

Fruland (1983) and Simon et al. (1990) included 74246 in their study of regolith breccias, although it is not made up of regolith components. It has an abundance of red glass with very high Ti content (TiO_2 = 14%). It also has fragments of mare basalt and minerals from mare basalt (figure 2).

Chemistry

The composition of 74246 is very Ti- and Fe-rich (figure 3).

Processing

There are 3 thin sections

References for 74246.

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Fruland R.M. (1983) Regolith Breccia Workbook. Curatorial Branch Publication # 66. JSC 19045.

Mineralogical Mode for 74246

	(Simon et al. 1990)	
Matrix	52.7 %	
	20-90 micron	90-100 micron
Mare Basalt	1.7	15.7
KREEP Basalt		
Feld. Basalt		
Plutonic	0.2	1.7
Granulitic	0.1	0.3
Breccia	0.1	0.4
Olivine	1.9	0.9
Pyroxene	6.5	3.3
Plagioclase	2.6	1.5
Opaques	5	0.6
Glass	2.4	1.7
Agglutinate	0.2	0.1

Table 1. Chemical composition of 74246.

reference	Simon90	
weight		
SiO2 %		
TiO2	8.17	(a)
Al2O3	10.5	(a)
FeO	17.1	(a)
MnO	0.25	(a)
MgO	7.3	(a)
CaO	11.2	(a)
Na2O	0.38	(a)
K2O	0.067	(a)
P2O5		
S %		
sum		
Sc ppm	74.3	(a)
V	105	(a)
Cr	3000	(a)
Co	20.3	(a)
Ni	20	(a)
Cu		
Zn		
Ga		
Ge ppb		
As		
Se		
Rb	9.6	(a)
Sr	120	(a)
Y		
Zr	120	(a)
Nb		
Mo		
Ru		
Rh		
Pd ppb		
Ag ppb		
Cd ppb		
In ppb		
Sn ppb		
Sb ppb		
Te ppb		
Cs ppm	0.4	(a)
Ba	80	(a)
La	7.14	(a)
Ce	19.5	(a)
Pr		
Nd	18	(a)
Sm	7.57	(a)
Eu	1.4	(a)
Gd	10.4	(a)
Tb	1.95	(a)
Dy	13.1	(a)
Ho		
Er		
Tm	1	(a)
Yb	6.74	(a)
Lu	1.02	(a)
Hf	5.7	(a)
Ta	1	(a)
W ppb		
Re ppb		
Os ppb		
Ir ppb	< 1	(a)
Pt ppb		
Au ppb	5.1	(a)
Th ppm	0.51	(a)
U ppm	0.06	(a)
technique:	*(a) INAA*	

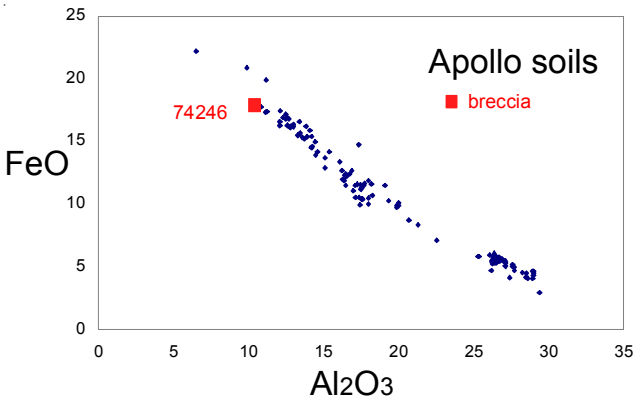

Figure 3: Composition of 74246 compared with lunar soils in general.

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Muehlberger et al. (1973) Documentation and environment of the Apollo 17 samples: A preliminary report. Astrogeology 71 322 pp superceeded by Astrogeolgy 73 (1975) and by Wolfe et al. (1981)

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