10091

Breccia

24 grams

Figure 1: Photo of remaining piece of 10091,26. Scale is in cm. NASA S76-25548.

Introduction

Karmer et al. (1977) give the weight of this breccia sample as 24 grams and explain that part of this sample was included in the "biopool" sample (10002). 10091,26 is the remaining piece (figure 1).

Petrography

10091 is a dark coherent breccia that breaks into angular pieces. It is probably a regolith breccia.

Chemistry

Oro et al. (1970) give an analysis of a "cleaved surface and an outer surface" of 10091 by "spark ionization mass spectroscopy."

Radiogenic age dating

No data.

FProcessing

About half of this sample was included in the "biopool". Apollo 11 samples were originally described and cataloged in 1969 and "recataloged" by Kramer et al. (1977). There are no petrographic thin sections for 10091.

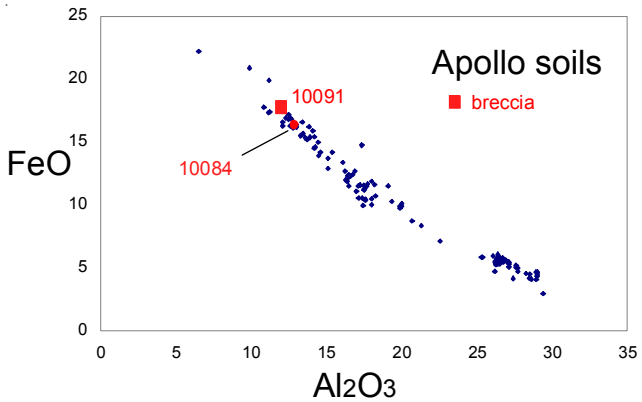

Figure 2: Composition of 10091 and soil samples.

Table 1. Chemical composition of 10091.

reference	*Oro 70*		
weight	*interior*	*exterior*	
SiO2 %			(a)
TiO2	*8.8*	*6.3*	
Al2O3			
FeO			
MnO			
MgO			
CaO			
Na2O			
K2O			
P2O5			
S %	*0.28*	*0.21*	
sum			
Sc ppm			
V	*31*	*25*	
Cr	*1800*	*2100*	
Co	*14*	*9.6*	
Ni	*160*	*420*	
Cu			
Zn			
Ga	*1.6*	*3*	
Ge ppb	*0.45*	*1.3*	
As	*0.39*	*0.28*	
Se			
Rb	*13*	*7*	
Sr	*40*	*42*	
Y	*1.4*	*1.3*	
Zr	*32*	*15*	
Nb	*2.3*	*1.8*	
Mo			
Ru			
Rh			
Pd ppb			
Ag ppb			
Cd ppb			
In ppb			
Sn ppb			
Sb ppb			
Te ppb			
Cs ppm	*0.22*	*0.89*	
Ba	*110*	*18*	
La	*0.73*	*0.34*	
Ce	*2.8*	*1*	
Pr			
Nd			
Sm			
Eu			
Gd			
Tb			
Dy			
Ho			
Er			
Tm			
Yb			
Lu			
Hf			
Ta			
W ppb			
Re ppb			
Os ppb			
Ir ppb			
Pt ppb			
Au ppb			
Th ppm			
U ppm			
technique	*(a) spark ionization mass spec.*		

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