

74111
Soil (or soil clod)
282 grams

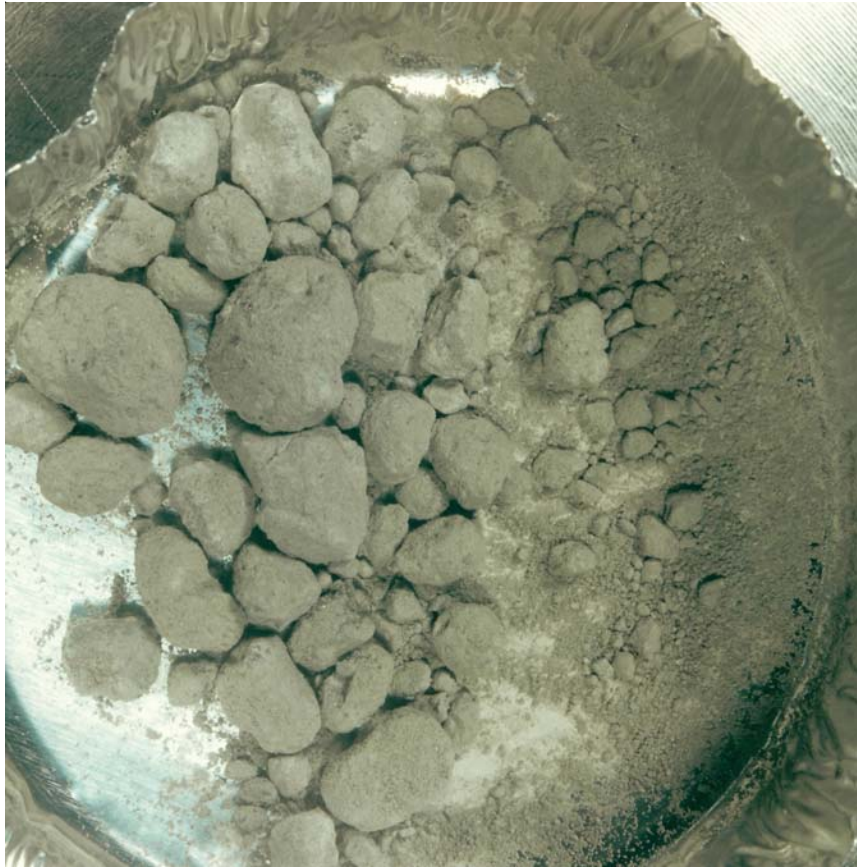


Figure 1: Photo of 74114,0 (coarse-fines from 74110). Dish is 5 cm across. NASA # S73-22238.

Introduction

This soil (?) was collected along with a very friable regolith breccia (74115) and undoubtedly contains a large portion of material abraded off of 74115-74119 (returned in same bag). It was collected at LRV-5 at a “pit crater” in the light mantle (see transcript).

Petrography

Morris (1978) determined the maturity index ($I_s/FeO = 31$).

Fruland (1983) and Simon et al. (1990) studied the main breccia fragment.

Meyer (1973) cataloged the 4 – 10 mm coarse-fines and Warren et al. (1991) studied one of the light colored particles (table).

Chemistry

Korotev and Kremser (1992) reported the composition of the fines.

Transcript

LMP Good gosh! Yes, that’s what they call a pit crater. Can you swing a little bit and let me get that fragment crater – see that one on your left there?

CDR Got you pictures?

LMP Yes, I got them.

CDR A quick rover sample of a very, very fragmental crater. The ejecta is about 50-percent small angular fragments, much different than we have seen before in terms of the type of patterns.

- - -
LMP I couldn’t tell whether that was just – it looked like that might have been a crater that had gotten through to bedrock. There might have been a high point, and it got down to bedrock. But I can’t (tell). It’s the most blocky-rimmed crater we’ve seen for a

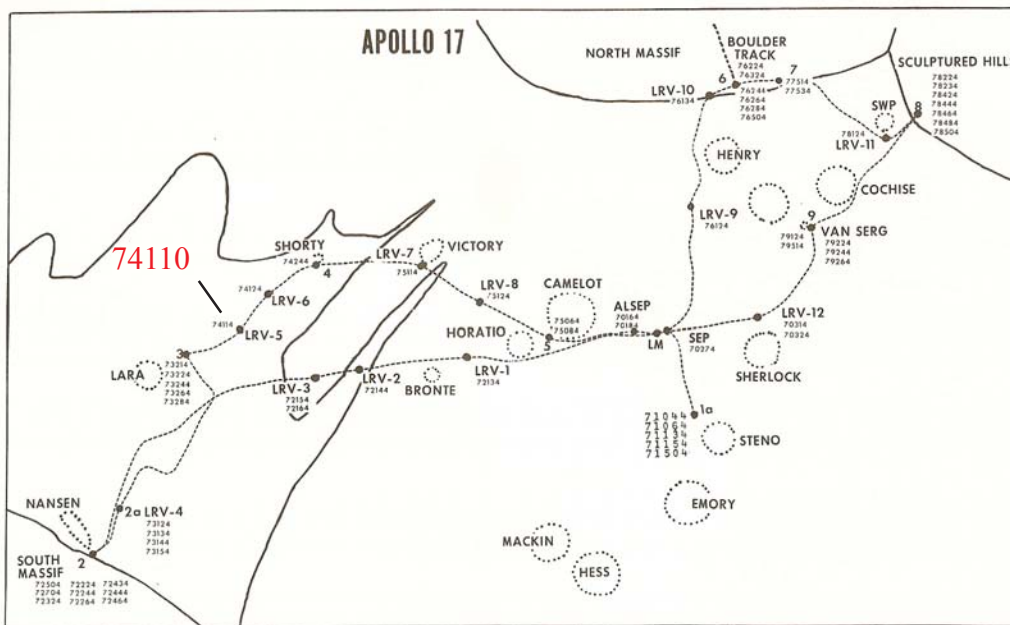


Figure 2: Location of soil sample 74110-5 at LRV-5 on Apollo 17 map (Meyer 1973). S73-24071

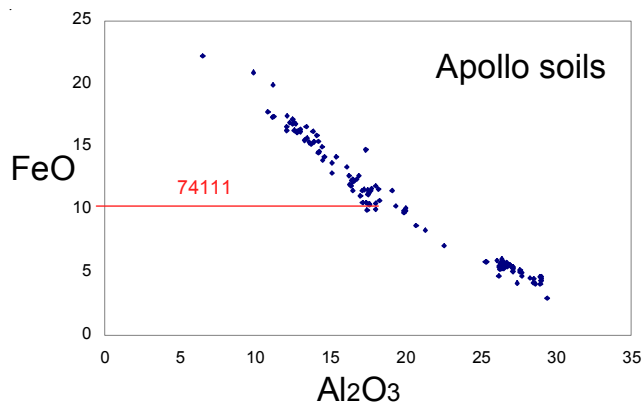


Figure 3: FeO content of 74111 compared with the composition of other Apollo soil.

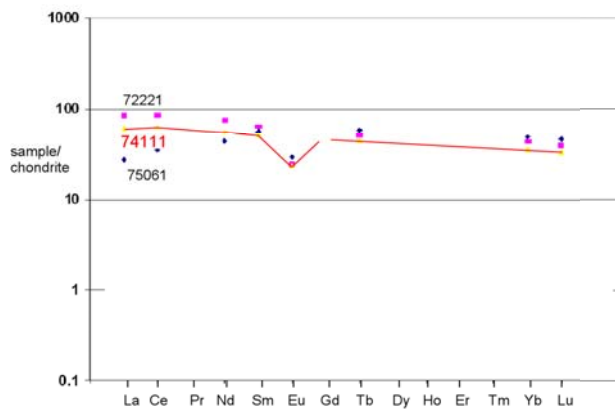


Figure 4: Normalized rare-earth-element diagram for 74111 compared with mare and highland soils.

long time. It was about 15 meters in diameter. There are no obvious lineations, that we can observe on the light mantle.

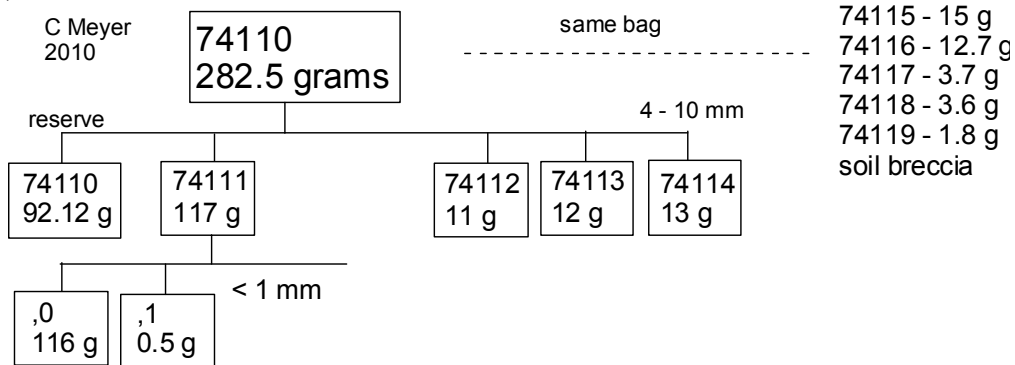


Table 1. Chemical composition of 74111.

reference weight	Korotev92		Warren91	
SiO ₂ %			44.5	(a)
TiO ₂			0.04	(a)
Al ₂ O ₃			33.6	(a)
FeO	9.92	(a)	0.94	(a)
MnO				
MgO			0.48	(a)
CaO			19.6	(a)
Na ₂ O	0.434	(a)	0.57	(a)
K ₂ O			0.038	(a)
P ₂ O ₅				
S %				
sum				
Sc ppm	24.7	(a)	2.61	(a)
V				
Cr	1782	(a)	73	(a)
Co	30.5	(a)	1.5	(a)
Ni	242	(a)	2.7	(a)
Cu				
Zn			0.47	(a)
Ga			4.2	(a)
Ge ppb			50	(a)
As				
Se				
Rb				
Sr	178	(a)	230	(a)
Y				
Zr				
Nb				
Mo				
Ru				
Rh				
Pd ppb				
Ag ppb				
Cd ppb				
In ppb				
Sn ppb				
Sb ppb				
Te ppb				
Cs ppm				
Ba	166	(a)	35	(a)
La	14.2	(a)	1.43	(a)
Ce	37.7	(a)	3.6	(a)
Pr				
Nd	25	(a)	2.4	(a)
Sm	7.5	(a)	0.61	(a)
Eu	1.31	(a)	1.42	(a)
Gd				
Tb	1.62	(a)	0.12	(a)
Dy				
Ho				
Er				
Tm				
Yb	5.78	(a)	0.45	(a)
Lu	0.808	(a)	0.063	(a)
Hf	6.05	(a)	0.18	(a)
Ta	0.84	(a)		
W ppb				
Re ppb				
Os ppb				
Ir ppb	8	(a)		
Pt ppb				
Au ppb	2.3	(a)		
Th ppm	2.4	(a)		
U ppm	0.6	(a)		

technique: (a) INAA

References for 74111

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