

78231 and 78250
Soil
210 and 50.6 grams

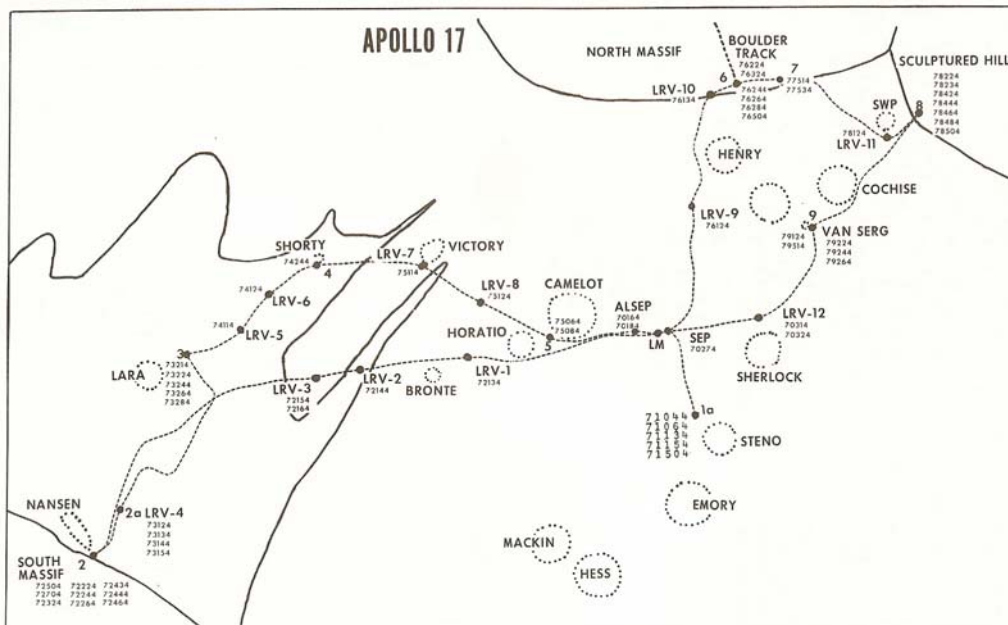


Figure 1: Map of Apollo 17 site showing location of coarse-fine particles (Meyer 1973). S73-24071.

Introduction

78230 and 78250 are soil samples collected when pieces of the norite boulder (78235 – 78255) fell on the regolith. These samples were returned in the same bags with, and may contain pieces of, the norite.

Petrography

The maturity index of 78231 is $I_s/FeO = 81$ (highly mature).

Meyer (1973) cataloged the coarse fines and Meyer (1994) summarized the research on the boulder samples (78235 and 78255).

Chemistry

All of the station 8 soil samples have similar chemical composition (see Korotev and Kremser 1992). This is evidence that these “bag residues” may indeed be good soil samples.

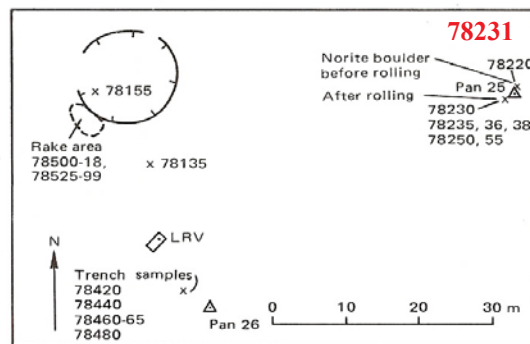


Figure 2: Map of station 8, Apollo 17.

Table 1. Composition of 78231 and 78250.

	78231	78250		
reference	Korotev92	Korotev92		
weight				
SiO ₂ %				
TiO ₂				
Al ₂ O ₃				
FeO	12	(a) 12.5	(a)	
MnO				
MgO				
CaO				
Na ₂ O	0.377	(a) 0.375	(a)	
K ₂ O				
P ₂ O ₅				
S %				
sum				
Sc ppm	34.9	(a) 37.1	(a)	
V				
Cr	2300	(a) 2410	(a)	
Co	35.5	(a) 38.2	(a)	
Ni	260	(a) 180	(a)	
Cu				
Zn				
Ga				
Ge ppb				
As				
Se				
Rb				
Sr	170	(a) 140	(a)	
Y				
Zr	200	(a) 200	(a)	
Nb				
Mo				
Ru				
Rh				
Pd ppb				
Ag ppb				
Cd ppb				
In ppb				
Sn ppb				
Sb ppb				
Te ppb				
Cs ppm				
Ba	131	(a) 108	(a)	
La	9.09	(a) 8.81	(a)	
Ce	24.8	(a) 25	(a)	
Pr				
Nd	14	(a) 18	(a)	
Sm	6.04	(a) 6.3	(a)	
Eu	1.33	(a) 1.36	(a)	
Gd				
Tb	1.32	(a) 1.51	(a)	
Dy				
Ho				
Er				
Tm				
Yb	4.95	(a) 5.41	(a)	
Lu	0.72	(a) 0.726	(a)	
Hf	4.79	(a) 5.38	(a)	
Ta	0.81	(a) 0.74	(a)	
W ppb				
Re ppb				
Os ppb				
Ir ppb	9.5	(a) 9.5	(a)	
Pt ppb				
Au ppb	2.8	(a) 4	(a)	
Th ppm	1.37	(a) 1.46	(a)	
U ppm	0.3	(a) 0.35	(a)	

technique: (a) INAA

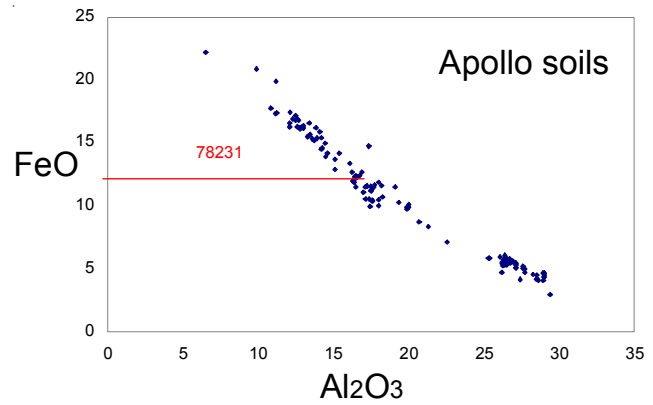


Figure 3: FeO content for 78231 compared with composition of other Apollo soil samples.

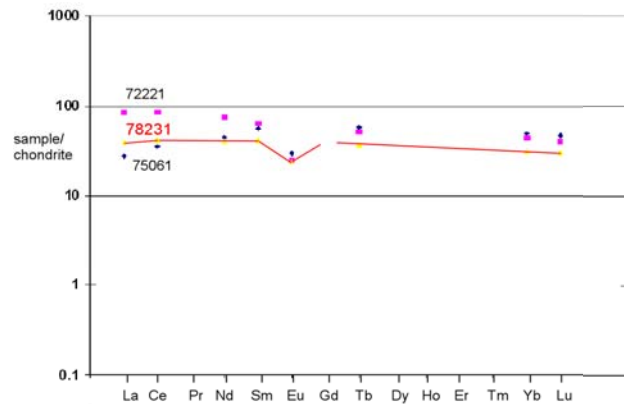
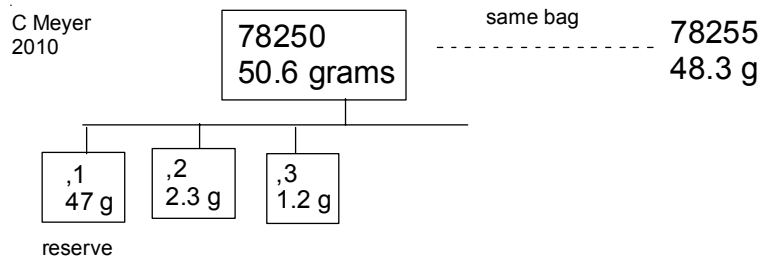
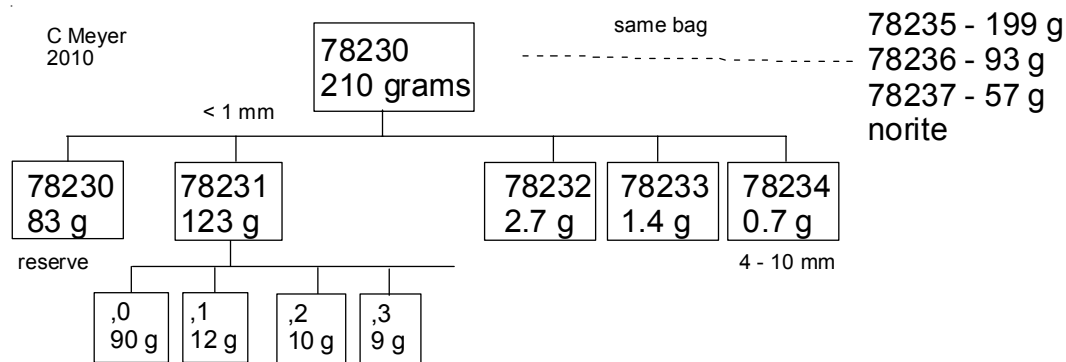


Figure 4: Normalized rare-earth-element diagram for 78231 compared with mare and highland soils.



References for 78250

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