

72150
Soil (bag residue)
53.3 grams

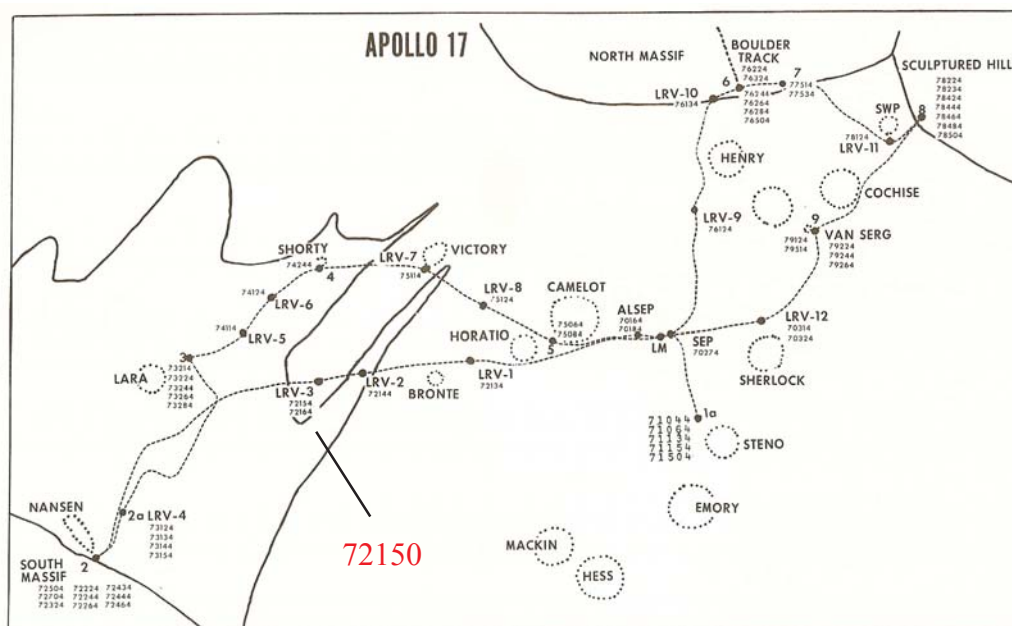


Figure 1: Location of soil sample 72150 at LRV-3 on Apollo 17 map (Meyer 1973). S73-24071

Introduction

72150 was collected at LRV – 3 along with basalt sample 72155 (figure 1). Although this is a “bag residue”, the high maturity indicates it is a proper soil (*it is not easy to pick up a rock from the regolith surface without getting some soil*).

Petrography

The maturity index of 72150 is $I_s/FeO = 82$ and the average grain size is 50 microns (Morris 1978, Graf

1993). Heiken and McKay (1974) determined the modal content, finding 53% agglutinate.

Chemistry

The composition of 72150 is intermediate between mare and highland material (figure 2 and 3). It is identical to soil sample 72161 collected at the same location.

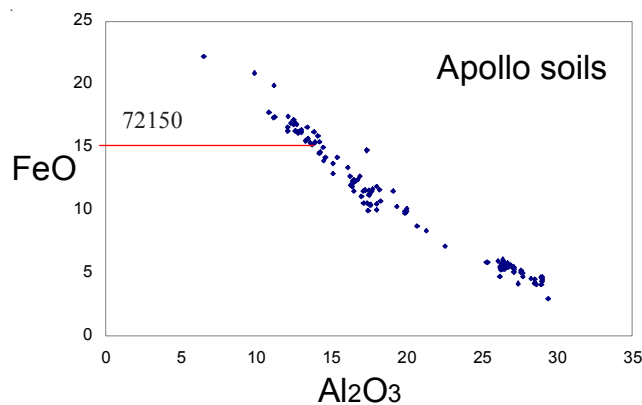


Figure 2: FeO content of 72150 compared with other Apollo soil samples.

Modal content of soil 72150 (90-150 micron).
From Heiken and McKay 1974.

	72159
Agglutinates	52.6
Basalt	9.6
Breccia	10.9
Anorthosite	0.5
Norite	
Gabbro	
Plagioclase	5.3
Pyroxene	5.3
Olivine	
Ilmenite	0.6
Orange glass	3.9
Glass other	10

Table 1. Chemical composition of 72150.

reference	Korotev92		Korotev76	
weight		90-150		<20 micron
SiO ₂ %				
TiO ₂				
Al ₂ O ₃				
FeO	14.9	(a)	15.2	13.7 (a)
MnO				
MgO				
CaO				
Na ₂ O	0.398	(a)	0.409	0.417 (a)
K ₂ O				
P ₂ O ₅				
S %				
sum				
Sc ppm	43.4	(a)	44.1	33.9 (a)
V				
Cr	2810	(a)	3140	2860 (a)
Co	40.9	(a)	38.8	38.5 (a)
Ni	250	(a)	265	315 (a)
Cu				
Zn				
Ga				
Ge ppb				
As				
Se				
Rb				
Sr	180	(a)		
Y				
Zr	280	(a)		
Nb				
Mo				
Ru				
Rh				
Pd ppb				
Ag ppb				
Cd ppb				
In ppb				
Sn ppb				
Sb ppb				
Te ppb				
Cs ppm				
Ba	128	(a)		
La	9.46	(a)	9.22	11.22 (a)
Ce	27	(a)	27.1	31.1 (a)
Pr				
Nd	20	(a)		
Sm	7.07	(a)	6.87	7.24 (a)
Eu	1.44	(a)	1.4	1.43 (a)
Gd				
Tb	1.67	(a)	1.63	1.66 (a)
Dy				
Ho				
Er				
Tm				
Yb	5.73	(a)	5.57	5.3 (a)
Lu	0.807	(a)	0.79	0.77 (a)
Hf	6.01	(a)	5.2	5.4 (a)
Ta	0.94	(a)	1.1	1.1 (a)
W ppb				
Re ppb				
Os ppb				
Ir ppb	9.5	(a)		
Pt ppb				
Au ppb	4.3	(a)		(a)
Th ppm	1.21	(a)	1.3	2 (a)
U ppm	0.46	(a)		

technique: (a) INAA

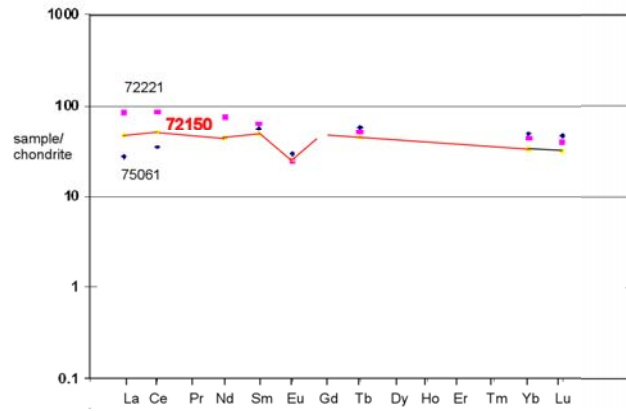
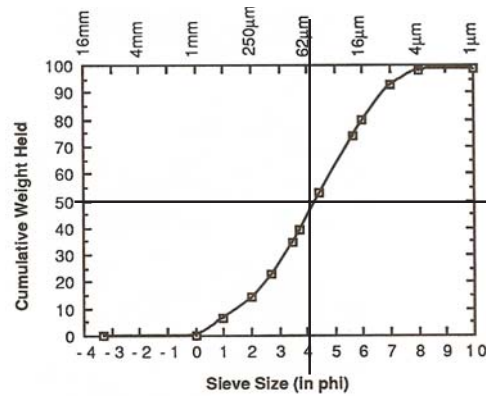


Figure 3: Normalized rare-earth-element diagram for 72150.



average grain size = 50 microns

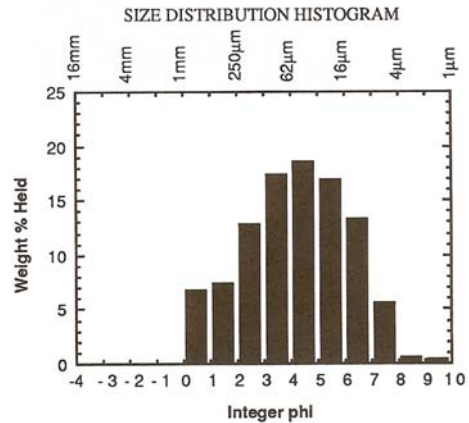
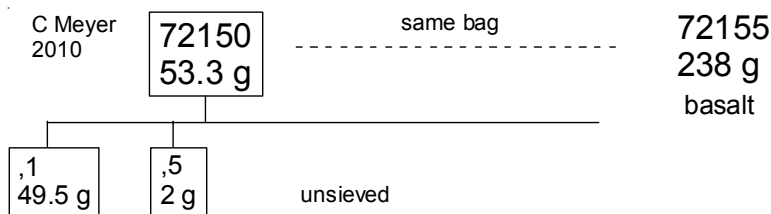


Figure 4: Grain size distribution for 72150 (Graf 1993, data from McKay).



References for 72150

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