78121

Soil

210 grams

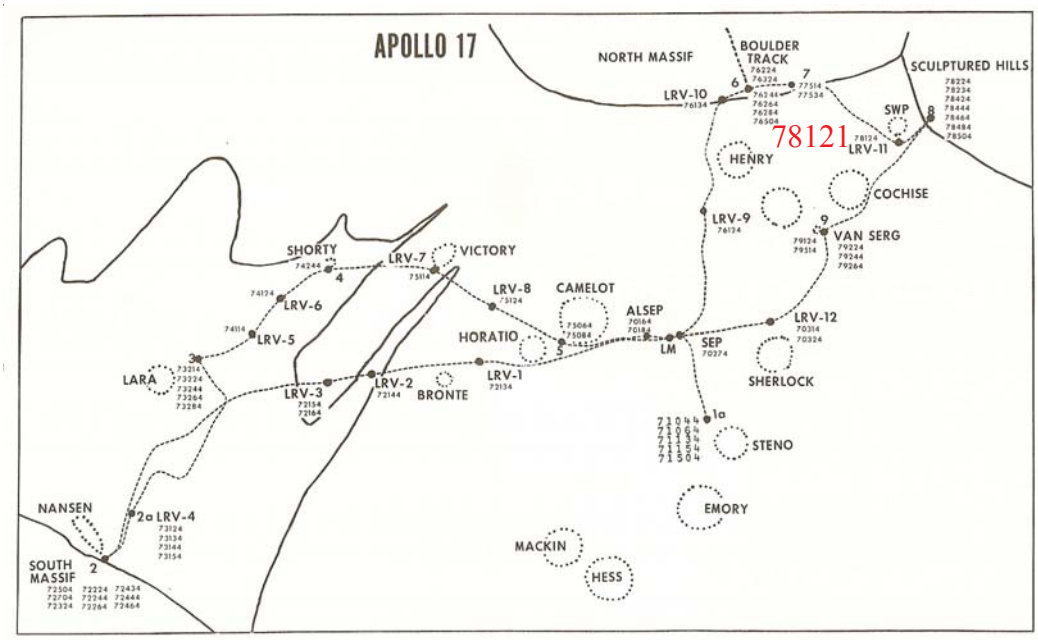


Figure 1: Location of soil sample 78120 at LRV-11 on Apollo 17 map (Meyer 1973). S73-24071

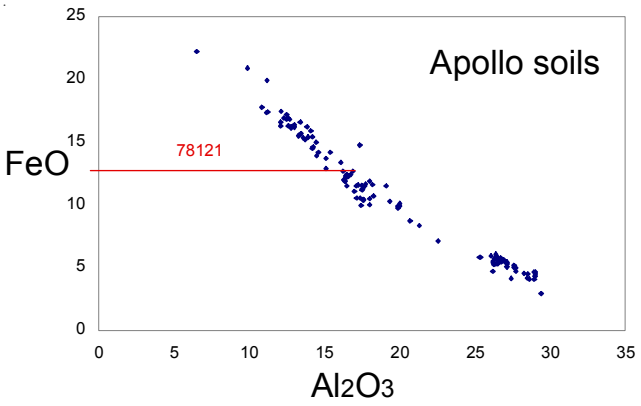


Figure 2: FeO content of 78121 compared with composition of Apollo soil samples.

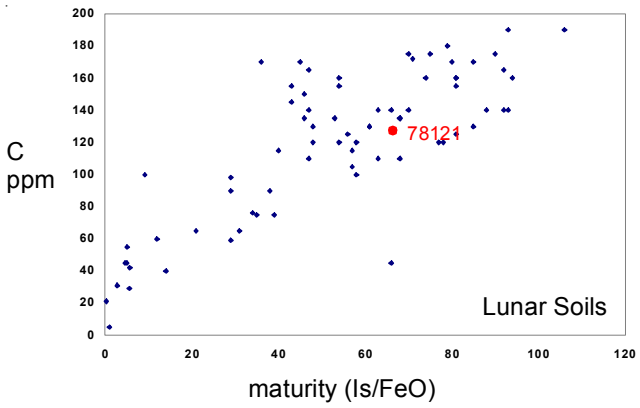


Figure 3: Carbon content and maturity index for 78121 compared with other Apollo soils.

Introduction

78120 is a soil sample collected at LRV stop 11 on mare surface (figure 1), but it has a composition like that of the soil samples from station 8, somewhat upslope on the Sculptured Hills.

Petrography

The maturity index of 78121 is I_s/FeO = 68 which classifies it as a mature soil (Morris 1978). Goswami and Lal (1974) determined the nuclear track density.

Chemistry

The FeO and Sc content is like that of the other station 8 soils. Heavy rare-earth-elements (Gd – Lu) are depleted compared to other mare and highland soils (figure 4).

Moore et al. (1974) determined 125 ppm carbon (figure 3).

Table 1. Chemical composition of 78121

reference	Korotev92		Philpotts74	
weight				
SiO2 %				
TiO2				
Al2O3				
FeO	12.8	(a)		
MnO				
MgO				
CaO				
Na2O	0.41	(a)		
K2O			0.1	(b)
P2O5				
S %				
sum				
Sc ppm	37	(a)		
V				
Cr	2360	(a)		
Co	34.6	(a)		
Ni	310	(a)		
Cu				
Zn				
Ga				
Ge ppb				
As				
Se				
Rb			2.22	(b)
Sr	150		154	(b)
Y				
Zr	250	(a)	188	(b)
Nb				
Mo				
Ru				
Rh				
Pd ppb				
Ag ppb				
Cd ppb				
In ppb				
Sn ppb				
Sb ppb				
Te ppb				
Cs ppm				
Ba	107	(a)	113	(b)
La	8.98	(a)		
Ce	24.9	(a)	25.2	(b)
Pr				(b)
Nd	17	(a)	19.2	(b)
Sm	6.24	(a)	6.26	(b)
Eu	1.36	(a)	1.39	(b)
Gd				
Tb	1.44	(a)		
Dy			9.84	(b)
Ho				
Er			5.74	(b)
Tm				
Yb	5.14	(a)	5.27	(b)
Lu	0.751	(a)	0.83	(b)
Hf	5.31	(a)		
Ta	0.79	(a)		
W ppb				
Re ppb				
Os ppb				
Ir ppb	10.5	(a)		
Pt ppb				
Au ppb	2.5	(a)		
Th ppm	1.32	(a)		
U ppm	0.32	(a)		
technique:	*(a) INAA, (b) IDMS*			

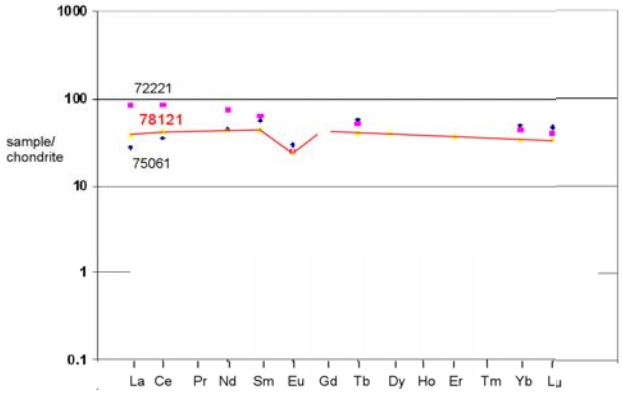
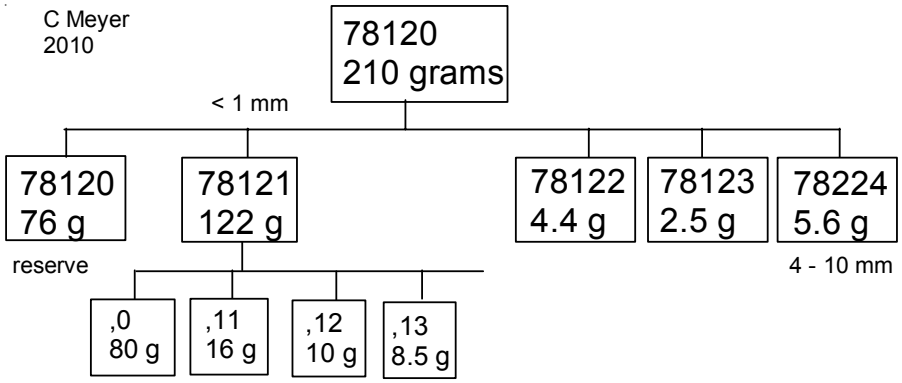


Figure 4: Normalized rare-earth-element diagram for 78121 compared with mare and highland soils.



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