

# 71131 and 71151

## Soil

144 and 71 grams

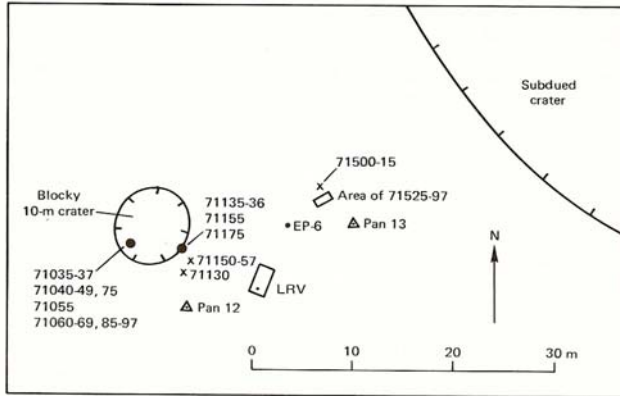


Figure 1: Map of station 1a, Apollo 17.

### Introduction

Soil samples 71130 and 71150 were collected close to a basalt boulder on the rim of a small blocky crater at station 1 (figure 1). They include numerous basalt fragments.

### Petrography

Morris (1978) determined the maturity index ( $I_s/FeO$ ) of 71131 and 71151 as 33 and 34, respectively. The small blocky crater is probably young (Wolfe et al. 1981).

### Chemistry

The chemical composition of these soils is the same as for 71501 which is representative of mare soil at this site (figures 2 and 3).

### Cosmogenic isotopes and exposure ages

O'Kelley et al. (1974) determined the cosmic-ray-induced activity of  $^{22}Na = 62$  dpm/kg,  $^{26}Al = 69$  dpm/kg, and  $^{54}Mn = 102$  dpm/kg.

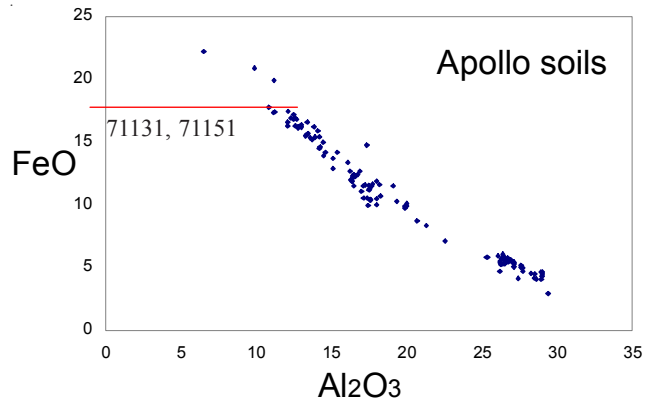


Figure 2: FeO content of 71131 and 71151 compared with composition of other Apollo soils.

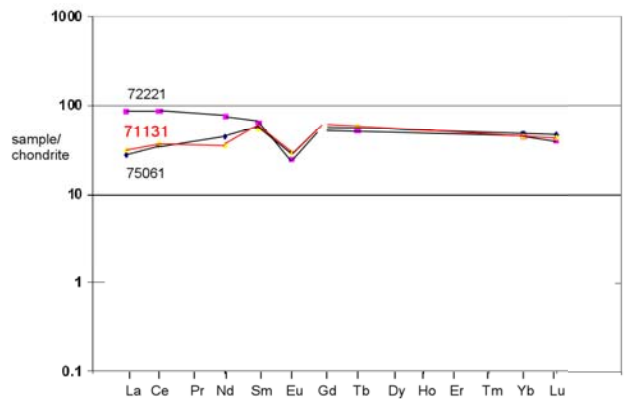
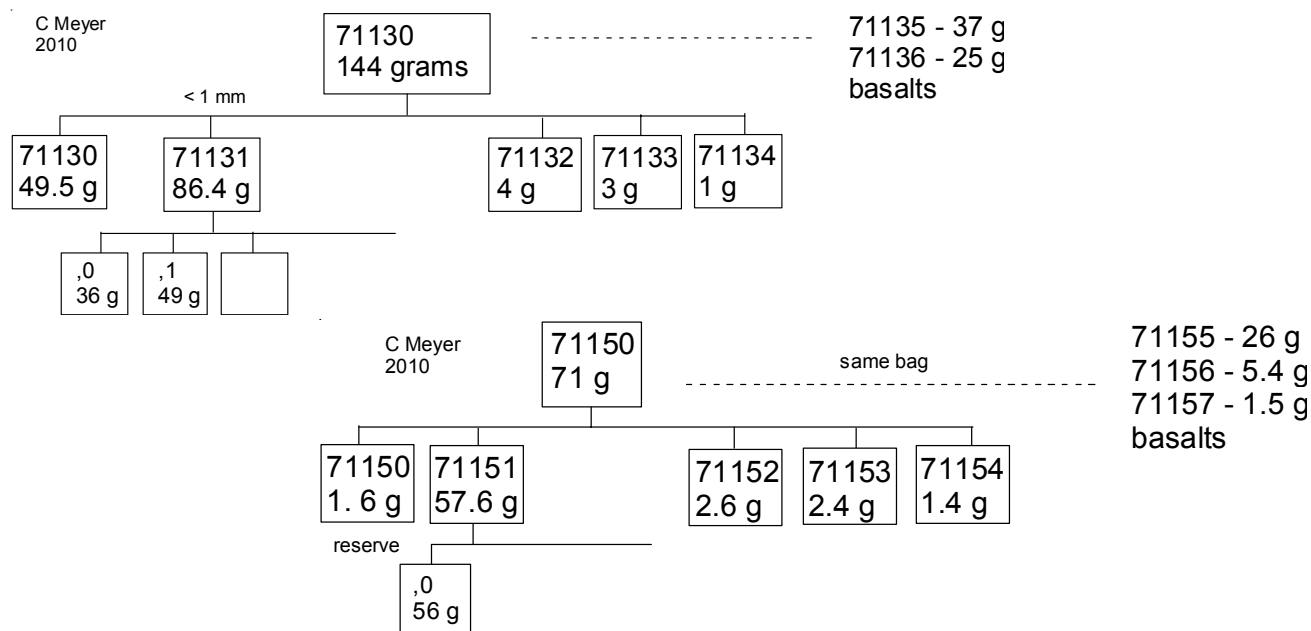


Figure 3: Normalized rare-earth-element diagram for 71131 and 71151. Note similarity with mare soil 75061.

**Table 1. Composition of 71131 and 71151.**

	71131	71131	71151	
<i>reference</i>	Korotev92	Eldridge74	Korotev92	
<i>weight</i>				
SiO <sub>2</sub> %				
TiO <sub>2</sub>				
Al <sub>2</sub> O <sub>3</sub>				
FeO	17.9	(a)	17.6	(a)
MnO				
MgO				
CaO				
Na <sub>2</sub> O	0.374	(a)	0.376	(a)
K <sub>2</sub> O		0.075	(b)	
P <sub>2</sub> O <sub>5</sub>				
S %				
<i>sum</i>				
Sc ppm	66.5	(a)	66.7	(a)
V				
Cr	3210	(a)	3100	(a)
Co	34.4	(a)	30.7	(a)
Ni	180	(a)	100	(a)
Cu				
Zn				
Ga				
Ge ppb				
As				
Se				
Rb				
Sr	100	(a)	150	(a)
Y				
Zr	210	(a)	170	(a)
Nb				
Mo				
Ru				
Rh				
Pd ppb				
Ag ppb				
Cd ppb				
In ppb				
Sn ppb				
Sb ppb				
Te ppb				
Cs ppm				
Ba	100	(a)	110	(a)
La	7.33	(a)	7.26	(a)
Ce	22.4	(a)	23.2	(a)
Pr				
Nd	16	(a)	17	(a)
Sm	8.08	(a)	8.15	(a)
Eu	1.62	(a)	1.67	(a)
Gd				
Tb	2.12	(a)	2.06	(a)
Dy				
Ho				
Er				
Tm				
Yb	7.36	(a)	7.39	(a)
Lu	1.04	(a)	1.03	(a)
Hf	7.38	(a)	6.97	(a)
Ta	1.33	(a)	1.36	(a)
W ppb				
Re ppb				
Os ppb				
Ir ppb			10	(a)
Pt ppb				
Au ppb	<6	(a)	5	(a)
Th ppm	0.8	(a) 0.67	(b) 0.69	(a)
U ppm	<0.6	(a) 0.23	(b) 0.19	(a)

*technique: (a) INAA, (b) radiation counting*



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