

68121
Soil
259 grams



Figure 1: Photo of area where 68120 was collected. AS16-107-17542

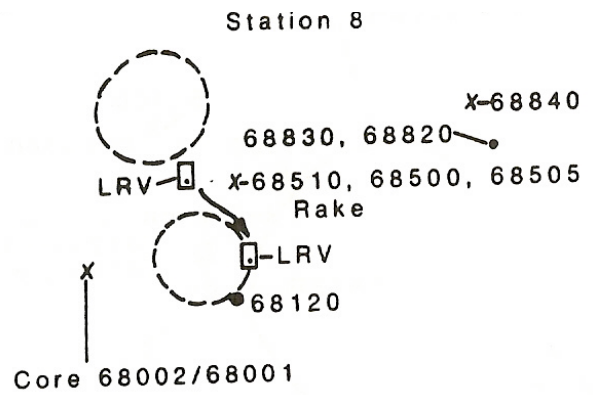
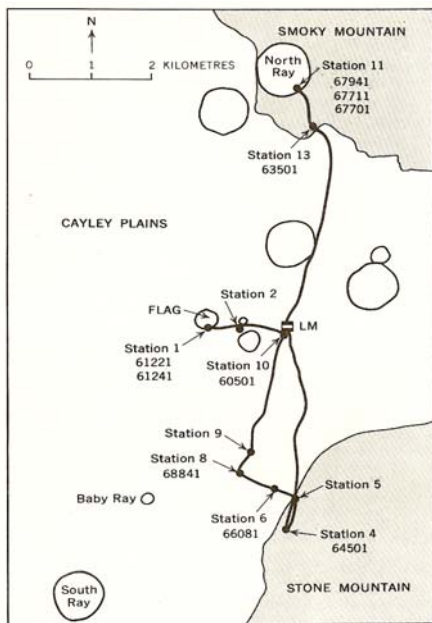


Figure 2 and 3: Maps of Apollo 16 site and station 8.

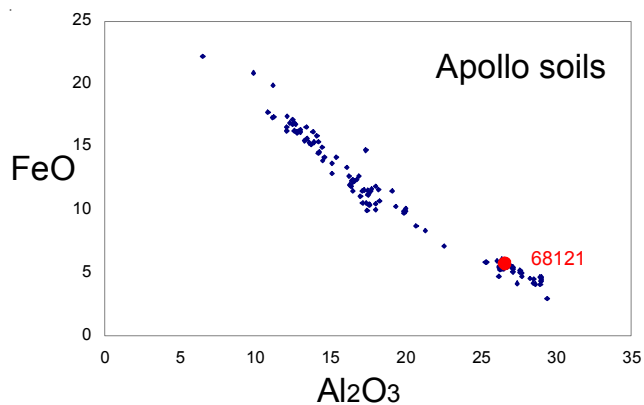


Figure 4: Composition of 68121 compared with Apollo soil samples.

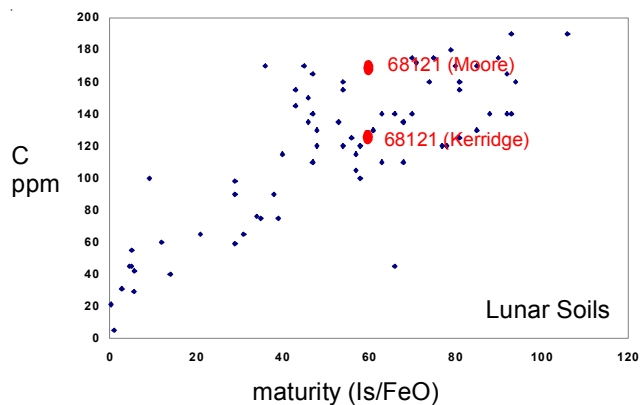


Figure 5: Carbon content and maturity index for 68121 compared with other soil samples.

Introduction

Station 8 was supposed to be on a ray from South Ray Crater. Soil sample 68120-68124 was collected from a “fillet” beside a large boulder (figure 1), directly beneath a “spall zone” on the side of the boulder (Horz et al. 1972). A double drive tube was collected nearby.

Petrography

The maturity index of 68121 is $I_s/FeO = 61$ (Morris 1978). The mineral mode, agglutinate count and grain size distribution have not been determined for this soil.

Chemistry

Compston et al. (1973) determined the major element content (figure 4), while Fruchter et al. (1974) determined the rare element content (figure 6).

Moore et al. (1973) determined 170 ppm carbon for 68121 (figure 5). Kerridge et al. (1975) determined 126 ppm carbon and 83 ppm nitrogen, and Moore and Lewis (1975) reported 83 ppm and 117 ppm nitrogen for 68121, respectively.

Cirlin and Housley (1981) determined 54 - 80 ppb Cd and 22.3 ppm Zn.

Other Studies

Bhandari et al. (1973) determined the “suntan” exposure age of 68121 by measurement of the density of fossil nuclear tracks.

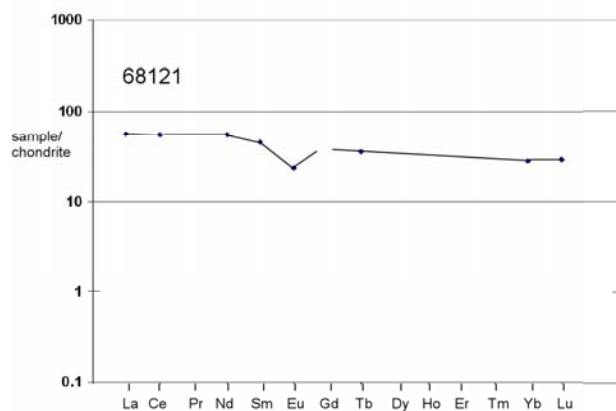
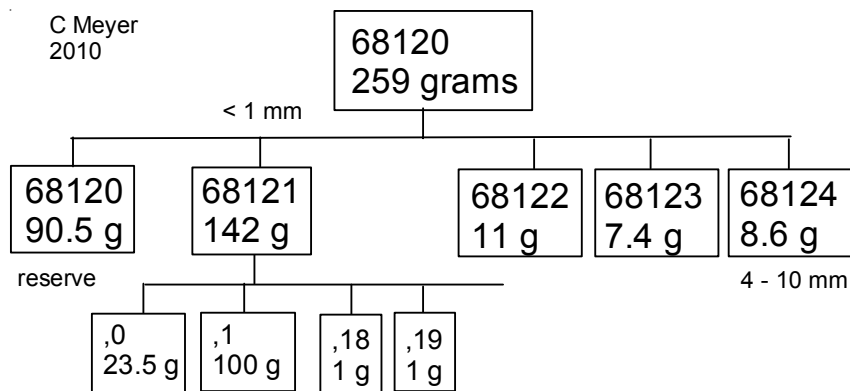


Figure 6: Normalized rare-earth-element diagram for 68121.

Table 1. Chemical composition of 68121.

reference	Compston73	Fruchter74	ave st. 8 Korotev81
<i>weight</i>			
SiO2 %	44.93	(a)	45.1
TiO2	0.58	(a)	0.56
Al2O3	26.43	(a)	26.6
FeO	5.67	(a) 5.15 (c)	5.35
MnO	0.08	(a)	0.07
MgO	6.04	(a)	6.3
CaO	15.5	(a)	15.3
Na2O	0.47	(a) 0.47 (c)	0.46
K2O	0.12	(a)	0.121
P2O5	0.14	(a)	
S %	0.08	(a)	
<i>sum</i>			
Sc ppm		9.8 (c)	9.6
V			14
Cr		732 (c)	760
Co		30 (c)	30
Ni			490
Cu			
Zn			
Ga			
<i>Ge ppb</i>			
As			
Se			
Rb	2.66	(b)	2.7
Sr	165	(b)	158
Y			48
Zr			194
Nb			
Mo			
Ru			
Rh			
<i>Pd ppb</i>			
<i>Ag ppb</i>			
<i>Cd ppb</i>			
<i>In ppb</i>			
<i>Sn ppb</i>			
<i>Sb ppb</i>			
<i>Te ppb</i>			
<i>Cs ppm</i>			
Ba		140 (c)	147
La		13.1 (c)	13.4
Ce		33 (c)	34
Pr			
Nd		25 (c)	
Sm		6.6 (c)	6.55
Eu		1.3 (c)	1.25
Gd			
Tb		1.3 (c)	1.27
Dy			
Ho			
Er			
Tm			
Yb		4.5 (c)	4.65
Lu		0.7 (c)	0.67
Hf		4.4 (c)	4.5
Ta		0.5 (c)	0.6
<i>W ppb</i>			
<i>Re ppb</i>			
<i>Os ppb</i>			
<i>Ir ppb</i>			
<i>Pt ppb</i>			
Au ppb			
Th ppm		2.5 (c)	2.4
U ppm			0.62
<i>technique: (a) XRF, (b) IDMS, (c) INAA</i>			



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