12029

Soil

6.5 grams

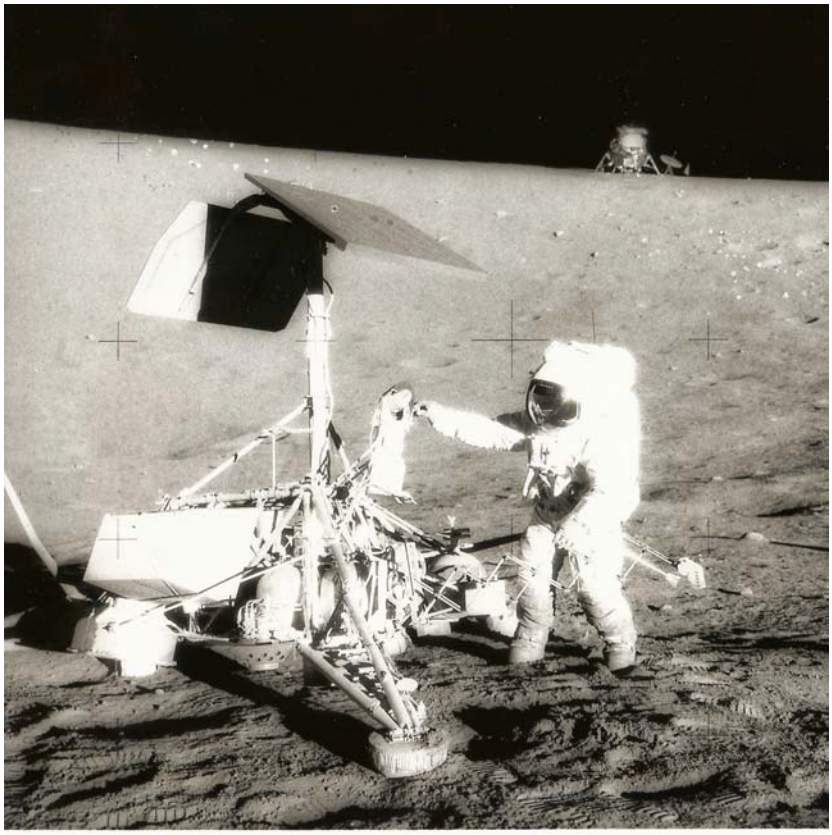

Figure 1: Astronaut removing camera from Surveryor III. Note telescoping arm with scoop in foreground and Apollo 12 Lunar Module on horizon. Remarkable photo AS12-48-7134.

Introduction

12029 is the soil recovered from the Surveyor (III) scoop. It has been found to be similar to lunar soil 12070 (Dwornik et al. 1974).

Various reports on the analysis of the Surveyor parts are to be found at the end of the Second Lunar Science Proceedings.

Petrography

The maturity of 12029 has not been determined. Dwornik et al. found 12029 to be entirely typical of Apollo 12 soil.

Chemistry

Dwornik et al. (1974) gives the only analysis of 12029.

Processing

The inventory of 12029 is confusing – see diagram.

Figure 2: Photo of scoop on Surveyor III with trench dug in soil. AS12-48-7128.

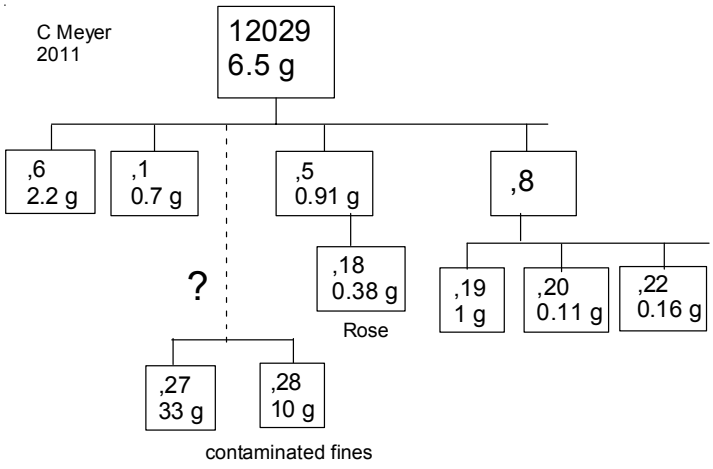

Table 1. Chemical composition of 12029.

reference	Dwornik74	
weight		
SiO2 %	46.6	(a)
TiO2	2.81	(a)
Al2O3	11.9	(a)
FeO	16.32	(a)
MnO	0.19	(a)
MgO	10.25	(a)
CaO	10.35	(a)
Na2O	0.5	(a)
K2O	0.23	(a)
P2O5	0.29	(a)
S %		
sum		
Sc ppm	44	(a)
V	130	(a)
Cr	2326	(a)
Co	44	(a)
Ni	190	(a)
Cu	13	(a)
Zn	4	(a)
Ga	5.2	(a)
Ge ppb		
As		
Se		
Rb	6.6	(a)
Sr	140	(a)
Y	140	(a)
Zr	500	(a)
Nb	30	(a)
Mo		
Ru		
Rh		
Pd ppb		
Ag ppb		
Cd ppb		
In ppb		
Sn ppb		
Sb ppb		
Te ppb		
Cs ppm		
Ba	420	(a)
La	42	(a)
Ce		
Pr		
Nd		
Sm		
Eu		
Gd		
Tb		
Dy		
Ho		
Er		
Tm		
Yb	13	(a)
Lu		
Hf		
Ta		
W ppb		
Re ppb		
Os ppb		
Ir ppb		
Pt ppb		
Au ppb		
Th ppm		
U ppm		

technique: (a) "microchemical"

References for 12029

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