

**78515****Dark Matrix Breccia****4.76 g, 1.5 x 1.5 x 1.0 cm****INTRODUCTION**

Sample 78515 was collected as part of a soil sample at Station 8. It appears to be an exotic breccia with relatively high  $\text{Al}_2\text{O}_3$  (22.8%).

It also has an unusual rare earth element pattern.

**PETROGRAPHY**

Butler (1973) describes 78515 as moderately coherent, medium grey, matrix-rich breccia with clasts composing less than 5% of the rock. However, the texture of this sample is not like typical soil breccias (Fig. 1). Jerde et al. (1987) determined that the maturity ( $I_s/\text{FeO}$ ) of 78515 was very low. Consequently, it may not be a soil breccia.

**WHOLE-ROCK CHEMISTRY**

Jerde et al. (1987) have reported the chemical composition of 78515 (Table 1). The sample has very high It (14 ppb). The rare earth element pattern is not like the local soil (Fig. 2).

**PROCESSING**

The largest piece of 78515 weighs 4.39 g. The only thin section is too small to study.

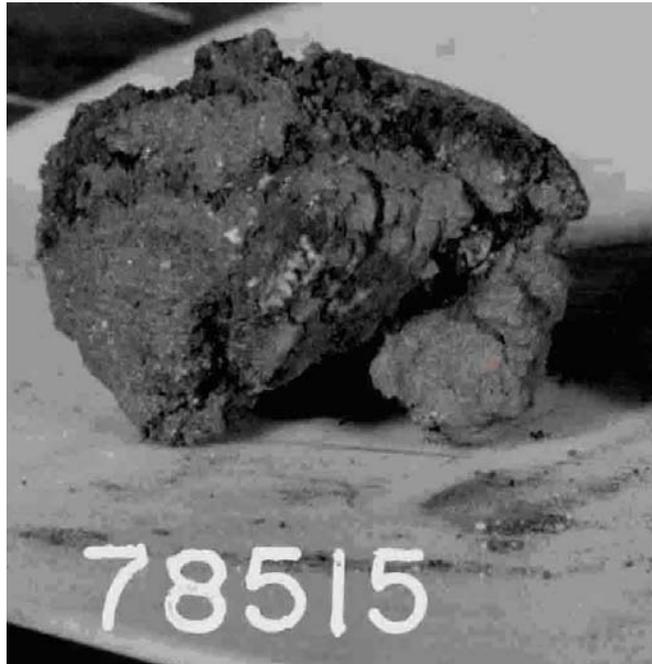


Figure 1: Photograph of 78515. Scale is 1 cm. S73-18607.

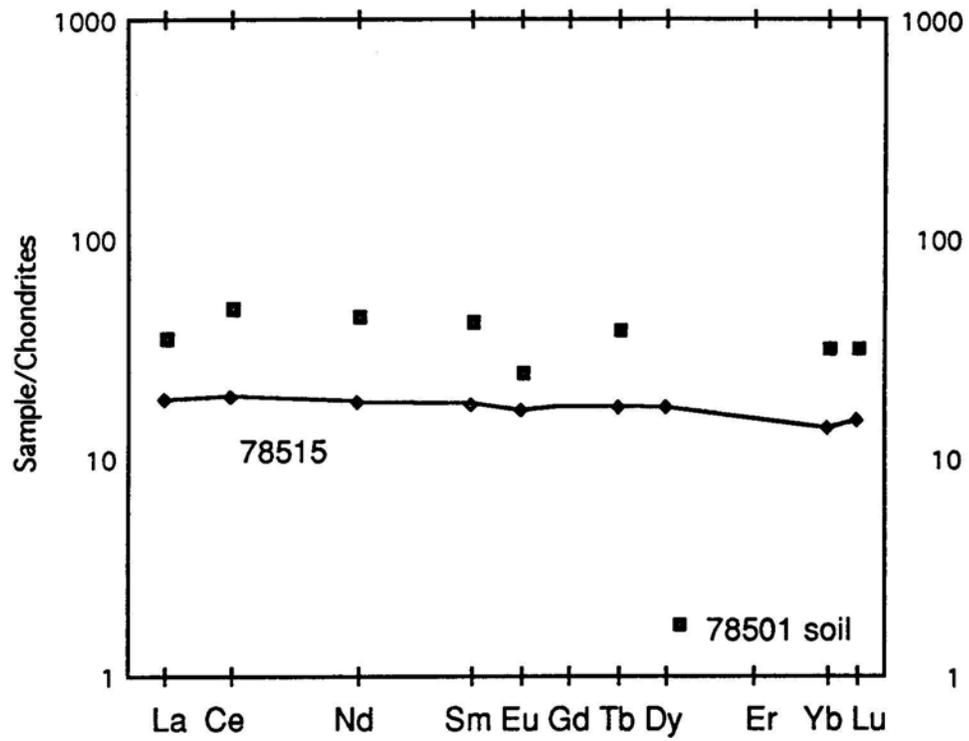


Figure 2: Normalized rare earth element diagram for 78515. Data from Jerde et al. (1987).

**Table 1.. Whole-rock chemistry of 78515.**  
From Jerde et al. (1987).

<b>Split Technique</b>	<b>,1 INAA</b>	<b>Split Technique</b>	<b>,1 INAA</b>
SiO <sub>2</sub> (wt%)	44.08	Ni	340
TiO <sub>2</sub>	1.67	Co	31.9
Al <sub>2</sub> O <sub>3</sub>	22.87	Sc	18.7
Cr <sub>2</sub> O <sub>3</sub>	0.18	La	4.3
FeO	7.72	Ce	11.3
MnO	0.11	Nd	8.2
MgO	7.52	Sm	2.56
CaO	14.42	Eu	0.93
Na <sub>2</sub> O	0.37	Gd	
K <sub>2</sub> O	0.054	Tb	0.62
Nb (ppm)		Dy	4.1
Zr	200	Er	
Hf	1.8	Yb	2.2
Ta	0.29	Lu	0.36
U	0.24	Ga	3.6
Th	0.75	Ge (ppb)	
Sr	130	Ir	14.8
Ba	69	Au	4.9
Cs	0.26		