

**78549****Soil Clod****1.6.09 g, 2.2 x 2.6 x 1.4 cm****INTRODUCTION**

Sample 78549 is a very friable soil breccia that was collected as part of a large rake sample at Station 8 (Fig. 1). It broke up into soil during processing (Fig. 2)

**PETROGRAPHY**

Butler (1973) described 78549 as friable, medium grey, matrix-rich breccia with clasts generally of millimeter size composing less than 5%70. Small clasts are generally white plagioclase, mare basalt, black aphanite, and orange glass.

Keil et al. (1974) and Warner et al. (1978f) included this sample in their catalogs. They noted that it contained feldspathic breccia clasts minor basalt fragments, and some agglutinates (which prove that it was a soil).

**MINERAL CHEMISTRY**

Warner et al. (1979) have studied the glass compositions in 78549.

**WHOLE-ROCK CHEMISTRY**

Laul and Schmitt (1975c) have reported the chemical composition of 78549 (Table 1 and Fig. 3). This sample has only about half the  $\text{TiO}_2$  of the 78501 soil. It may be a soil breccia from upslope on the Sculptured Hills.



Figure 1: Photograph of 78549. Scale is 1 cm. S73-21015.

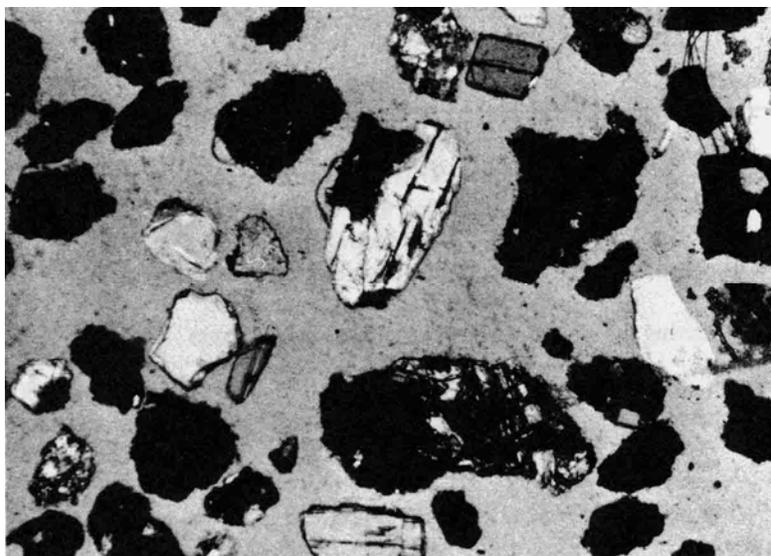


Figure 2: Photomicrograph of grains from 78549. From Warner et al. (1978f).

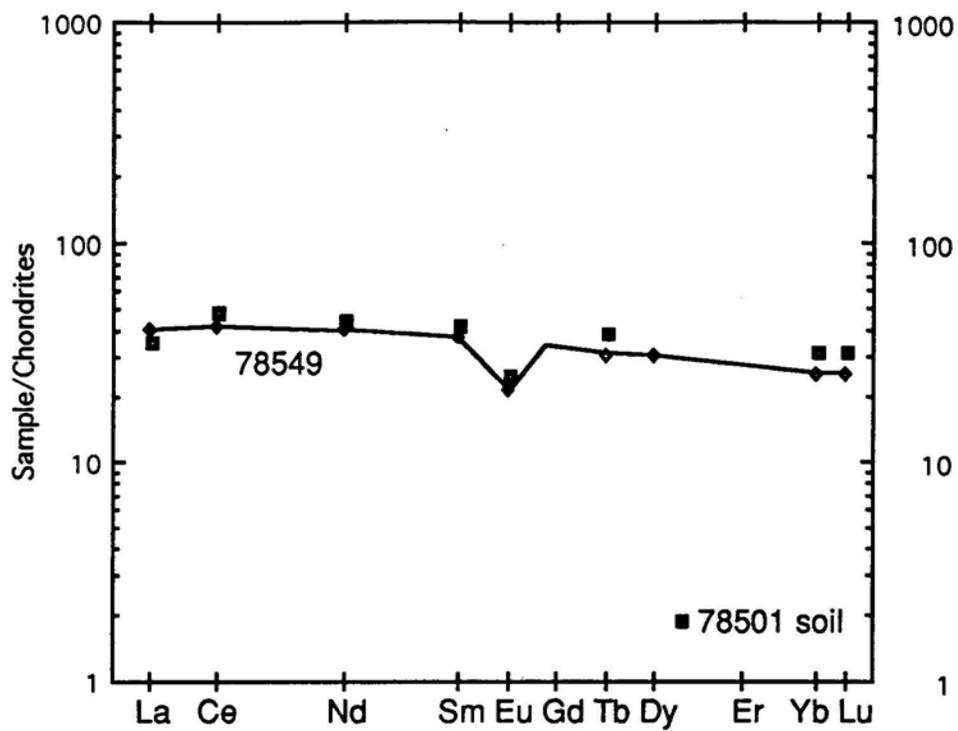


Figure 3: Normalized rare earth element diagram for 78549. Data from Laul and Schmitt (1975). Data for 78501 soil are for comparison..

**Table 1: Whole-rock chemistry of 78549.**  
From Laul and Schmitt (1975c).

<b>Split Technique</b>	<b>,1 INAA</b>
SiO <sub>2</sub> (wt%)	–
TiO <sub>2</sub>	2.6
Al <sub>2</sub> O <sub>3</sub>	18.0
Cr <sub>2</sub> O <sub>3</sub>	0.294
FeO	11.4
MnO	0.142
MgO	10
CaO	11.9
Na <sub>2</sub> O	0.39
K <sub>2</sub> O	0.10
Nb (ppm)	
Zr	–
Hf	4.3
Ta	0.63
U	0.4
Th	1.2
Ba	140
Ni	300
Co	41.8
Sc	26
La	9.4
Ce	25
Nd	18
Sm	5.4
Eu	1.2
Gd	
Tb	1.1
Dy	7.3
Er	
Yb	4.1
Lu	0.6
Ge (ppb)	
Ir	10
Au	3