78509

High-Ti Mare Basalt
8.68 g, 1.5 x 1.0 x 1.0 cm

INTRODUCTION

Sample 78509 was collected as part of a soil sample at Station 8. It is a typical ilmenite-rich mare basalt from Apollo 17 (Fig. 1).

PETROGRAPHY

Sample 78509 is a typical vuggy mare basalt (Fig. 2) with medium grain size (Butler, 1973).

WHOLE-ROCK CHEMISTRY

Ma et al. (1979) have reported the chemical composition of 78509 (Table 1 and Fig. 3). The soil (78501) has a high percentage of mare basalt.

Sample 78509 is classified as a Type B Apollo 17 basalt (see appendix).

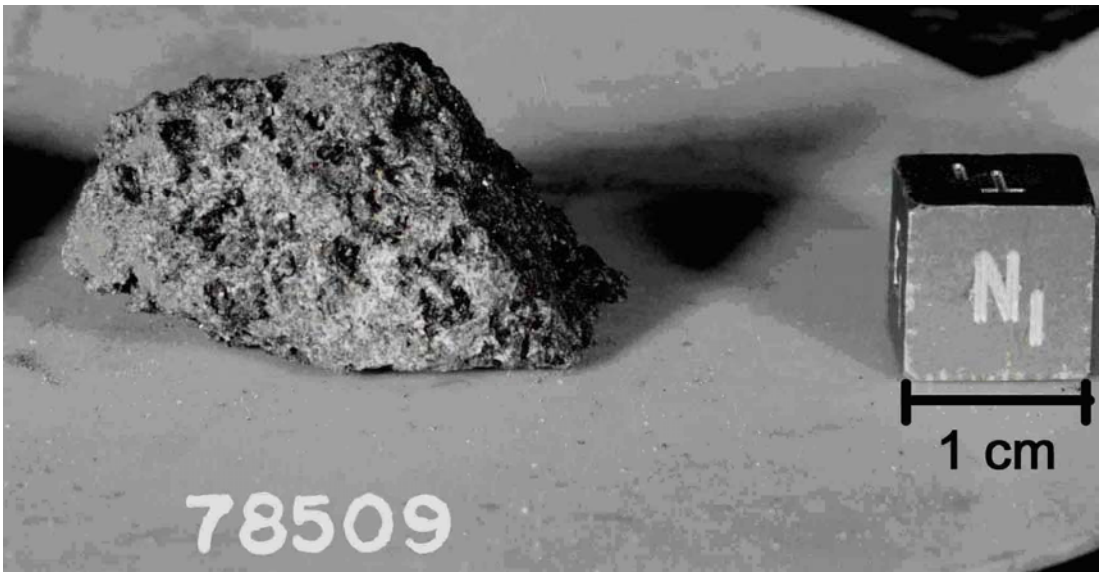

Figure 1: Photograph of 78509. Cube is 1 cm. S73-18608.

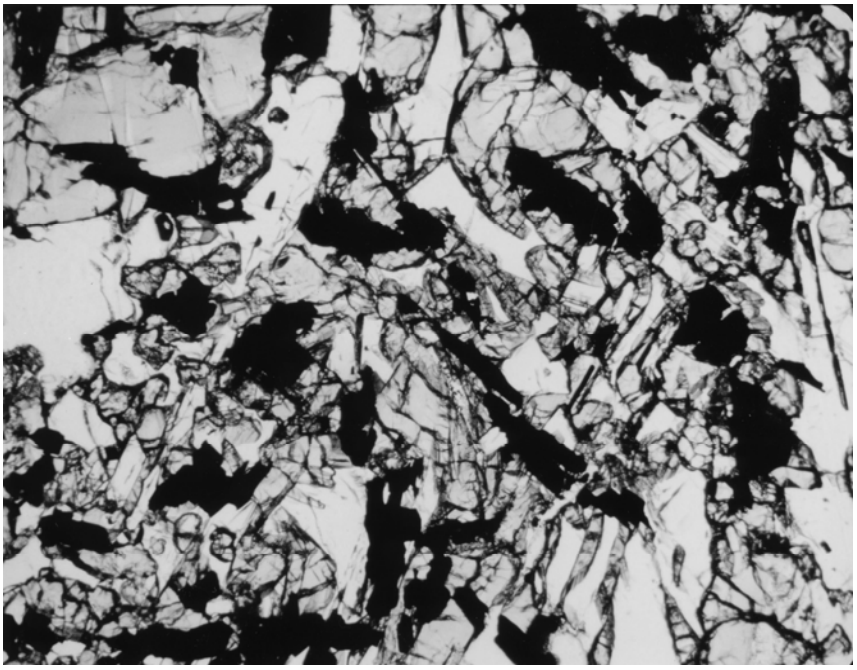

Figure 2. Photomicrograph of thin section 78509,5. Field of view is 3 x 4 mm.

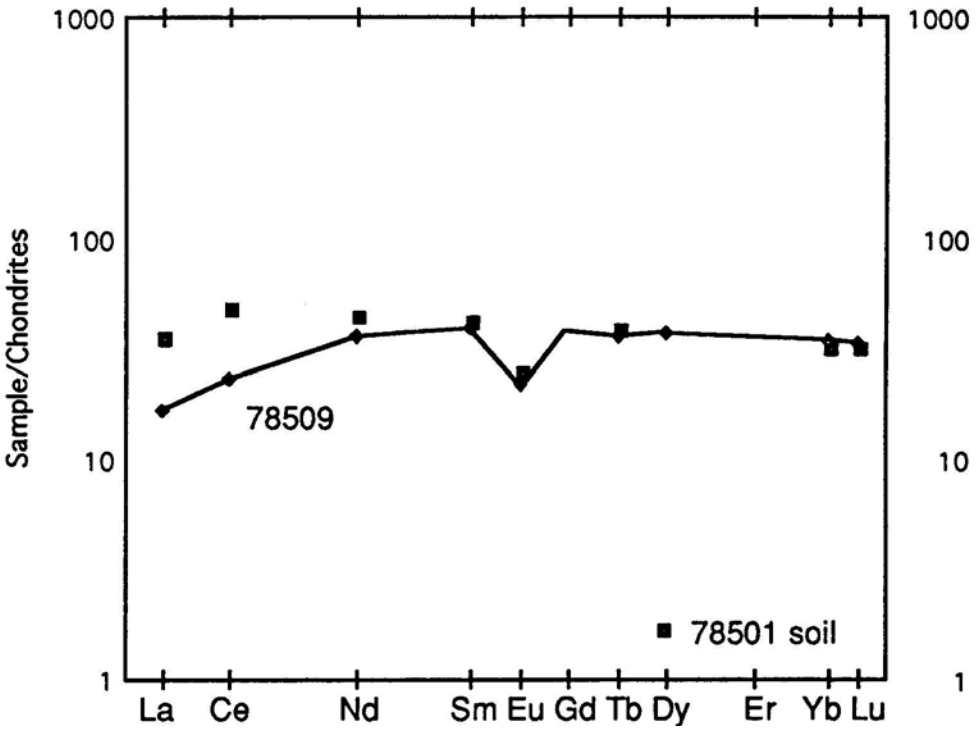

Figure 3. Normalized rare earth element diagram for 78509. Data fir the local soil are also included for comparison. Data from Ma et al. (1979).

Table 1: Whole-rock chemistry of 78509.
From Ma et al. (1979).

Split	,1
Technique	INAA
SiO_2 (wt%)	–
TiO_2	12.3
Al_2O_3	9.2
Cr_2O_3	0.388
FeO	19.0
MnO	0.252
MgO	8
CaO	10.9
Na_2O	0.414
K_2O	0.04
Nb (ppm)	
Hf	5.1
Ta	1.3
Ni	
Co	22
Sc	89
La	3.9
Ce	14
Nd	16
Sm	5.8
Eu	1.22
Gd	
Tb	1.3
Dy	9
Er	
Yb	5.5
Lu	0.8
Ge (ppb)	
Ir	
Au	