78569

High-Ti Mare Basalt
14.53 g, 2.3 x 1.9 x 1.5 cm

INTRODUCTION

Sample 78569 was collected as part of the large rake sample at Station 8. It is a typical ilmenite-rich mare basalt from Apollo 17 (Fig. 1).

PETROGRAPHY

Sample 78569 is a fine- to medium-grained mare basalt with ~48% pyroxene, 27% plagioclase, 4% olivine, and 17% ilmenite (Fig. 2). There are trace amounts of silica, armalcolite, tranquillityite, and zirconolite (Keil et al., 1974 and Warner et al., 1978f).

Partial breccia coating suggests this basalt may have been a breccia clast (Butler, 1973).

MINERAL CHEMISTRY

The compositions of minerals in this basalt sample are given in the catalog by Warner et al. (1978f) (Fig. 3).

WHOLE-ROCK CHEMISTRY

Laul et al. (1975b) and Warner et al. (1975b) have reported the chemical composition of 78569 (Table 1 and Fig. 4).

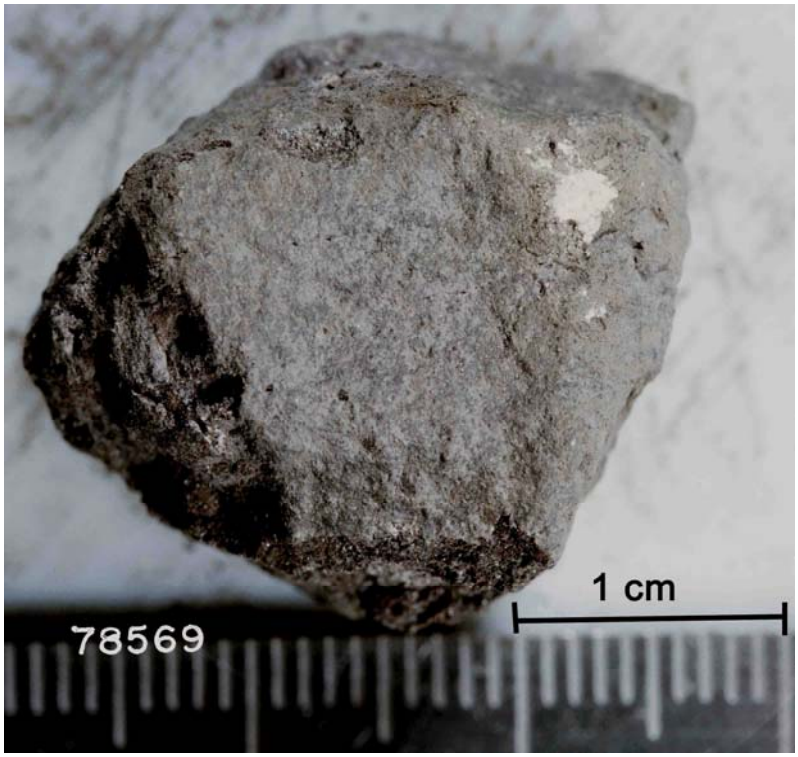

Figure 1: Photograph of 78569. Scale is 1 mm. S73-21035.

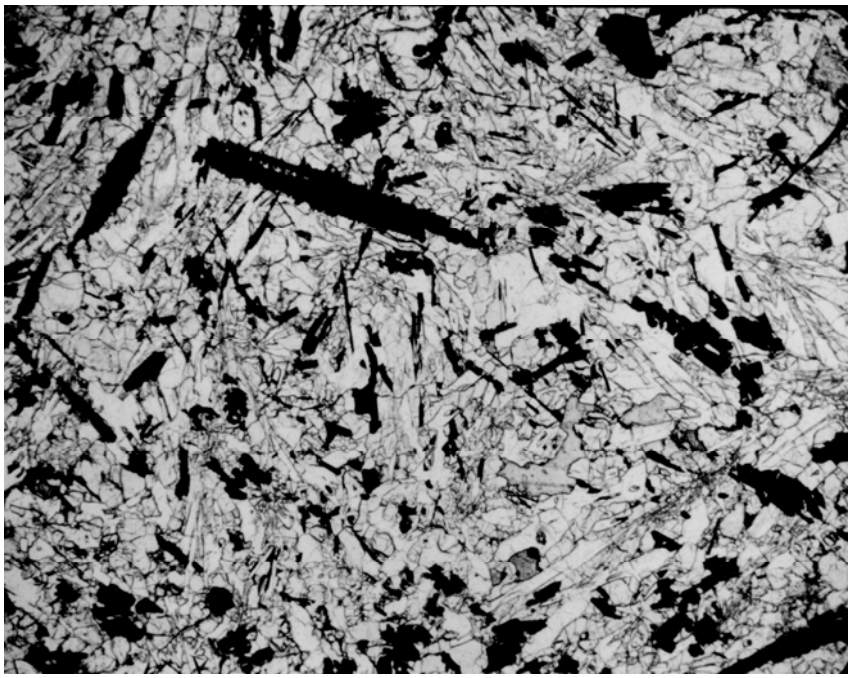

Figure 2: Photomicrograph of thin section 78569,7. Field of view is 3 x 4 mm.

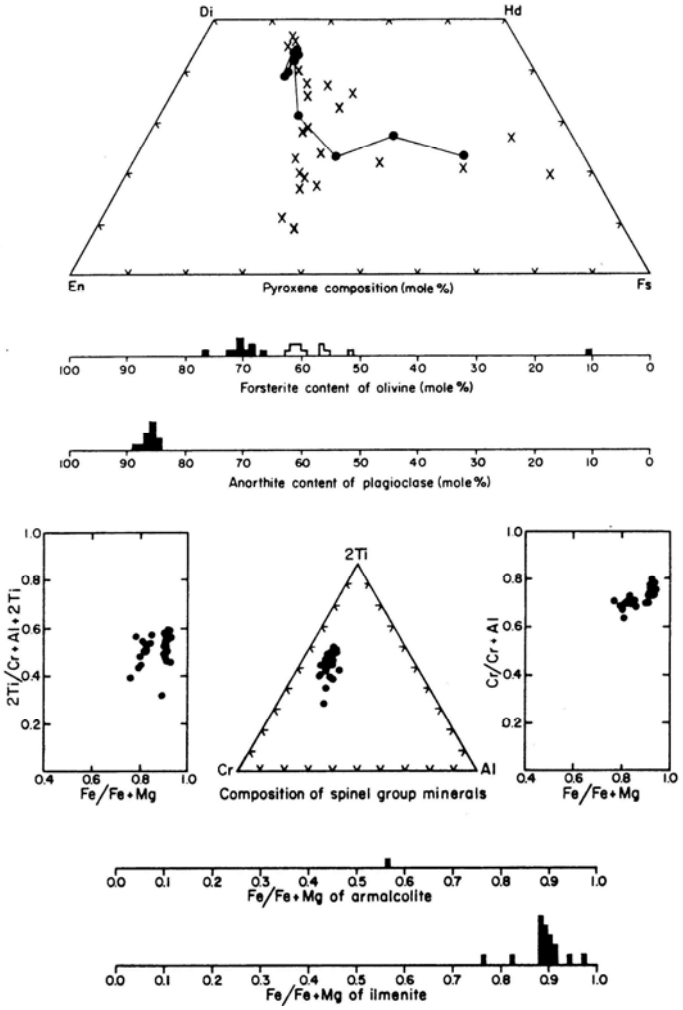

Figure 3: Mineral compositions for 78569. From Warner et al. (1978f).

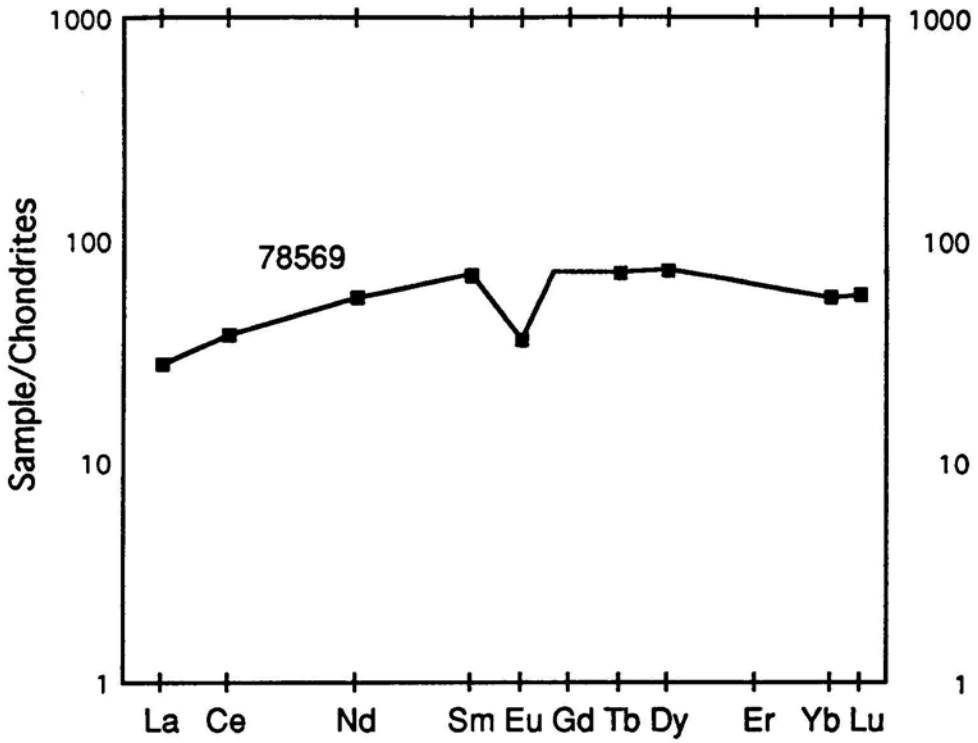

Figure 4: Normalized rare earth element diagram of 78569. Data from Warner et al. (1975b).

Table 1: Whole-rock chemistry of 78569.
From Warner et al. (1975b).

Split Technique	,3 INAA
SiO_2 (wt%)	–
TiO_2	12.3
Al_2O_3	8.7
Cr_2O_3	0.4
FeO	19.3
MnO	0.24
MgO	7.8
CaO	10.6
Na_2O	0.40
K_2O	0.075
Nb (ppm)	
Hf	8.8
Ta	1.7
Ni	
Co	19.2
Sc	76
La	6.6
Ce	23
Nd	25
Sm	10.3
Eu	2
Gd	
Tb	2.6
Dy	18
Er	
Yb	9.2
Lu	1.4
Ge (ppb)	
Ir	
Au	