78575

High-Ti Mare Basalt
140.0 g, 5.8 x 4.8 x 3.4 cm

INTRODUCTION

Sample 78575 was collected as part of the large rake sample at Station 8. It is a coarse-grained, vuggy, ilmenite-rich mare basalt from Apollo 17 (Fig. 1).

PETROGRAPHY

The modal mineralogy of 78575 is ~51% pyroxene, 30% plagioclase, 16% ilmenite, and trace olivine. Trace amounts of silica, armalcolite, tranquillityite, and zirconolite are also reported (Keil et al., 1974, and Warner et al., 1978f).

The texture of 78575 is described as allotriomorphic-granular by Warren et al. (Fig. 2). Coarse pyroxenes are subequant to equant, uniformly granular, and tend to cluster. Plagioclase occurs as broad, tabular, nonpoikilitic crystals. Ilmenite crystals are subequant and form chains.

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

Warner et al. (1975b) have reported the chemical composition of 78575 (Table 1 and Fig. 4).

Sample 78575 is a Type B Apollo 17 basalt (see appendix).

Figure 1: Photograph of 78575. Scale is 1 cm. S73-21414.

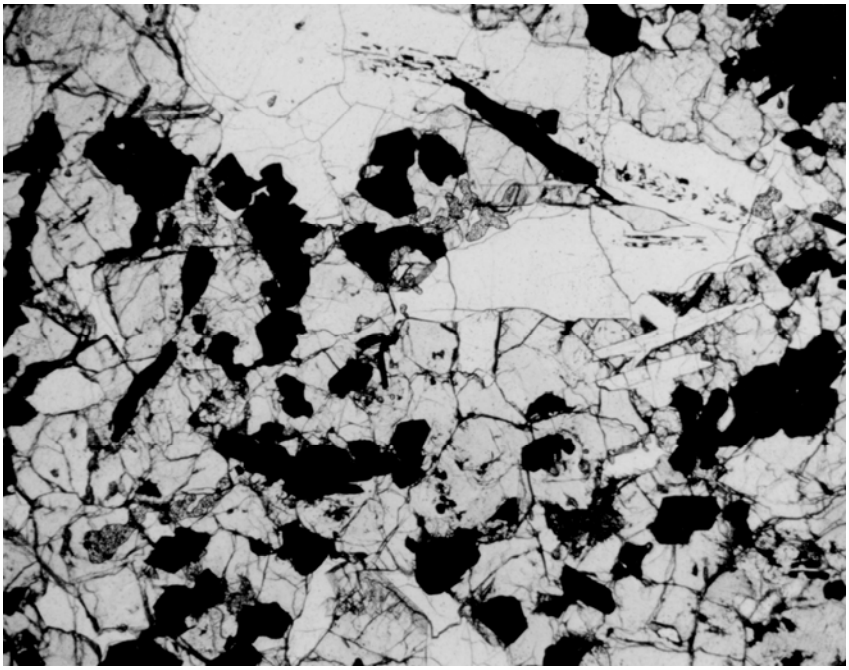

Figure 2: Photomicrograph of thin section 78575,15. Field of view is 3 x 4 mm.

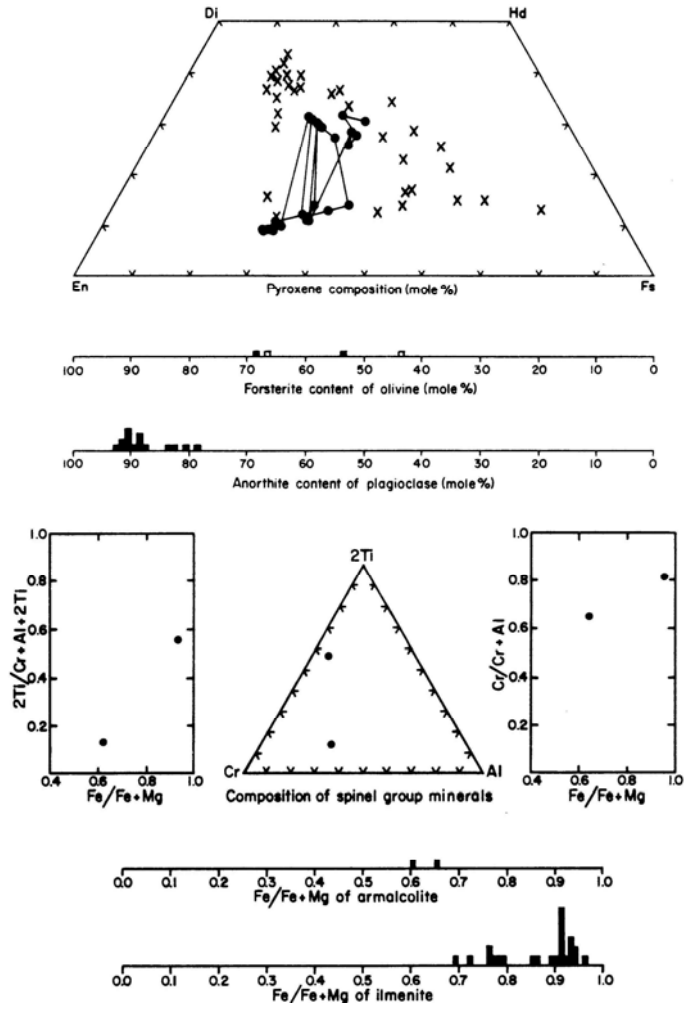

Figure 3: Chemical compositions of minerals in 78575. From Warner et al. (1978f).

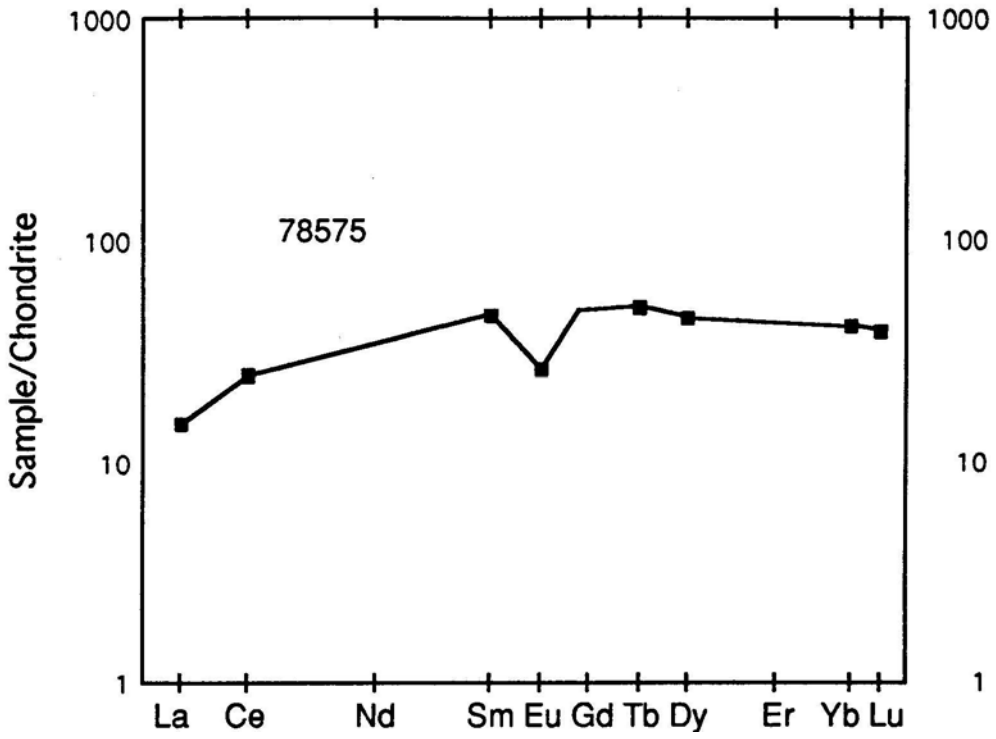

Figure 4: Normalized rare earth element diagram of 78575. Data from Warner et al. (1975b).

Table 1: Whole-rock chemistry of 78575.
From Warner et al. (1975b).

Split Technique	,3 INAA
SiO_2 (wt%)	–
TiO_2	11.8
Al_2O_3	9.0
Cr_2O_3	0.46
FeO	17.0
MnO	0.216
MgO	7.5
CaO	11.0
Na_2O	0.36
K_2O	0.04
P_2O_5	
Nb (ppm)	
Hf	5.4
Ta	1.2
Ni	
Co	16.1
Sc	75
La	3.6
Ce	15
Nd	
Sm	6.7
Eu	1.47
Gd	
Tb	1.8
Dy	11
Er	
Yb	6.6
Lu	0.95
Ge (ppb)	
Ir	
Au	