

78585**High-Ti Mare Basalt****44.60 g, ~3.0 x 3.5 x 4.0 cm****INTRODUCTION**

Sample 78585 is a dark black, aphanitic mare basalt from the large rake sample at Station 8 (Fig. 1).

In hand specimen, one surface of 78585 appears to have a large brown clast, but this is a cavity filled with regolith dirt.

PETROGRAPHY

Butler (1973) describes 78585 as a very fine-grained mare basalt.

In thin section it is opaque with ~10% thin chains of skeletal olivine (Fig. 2). Since it has high TiO₂ (11.8%), the opaqueness is due to fine ilmenite, which commonly nucleates on olivine (Fig. 3).

MINERAL CHEMISTRY

Mineral compositions have not been determined. This sample was not studied by Warner et al. (1978f).

WHOLE-ROCK CHEMISTRY

Ma et al. (1977) have reported the chemical composition of 78585 (Table 1 and Fig. 4). The rare earth element pattern is similar to those of the other Apollo 17 basalts. Rhodes and Blanchard (1983) also performed an analysis of 78585, but give no data.

The low Hf content indicates that 78585 is a Type B Apollo 17 basalt (see appendix).

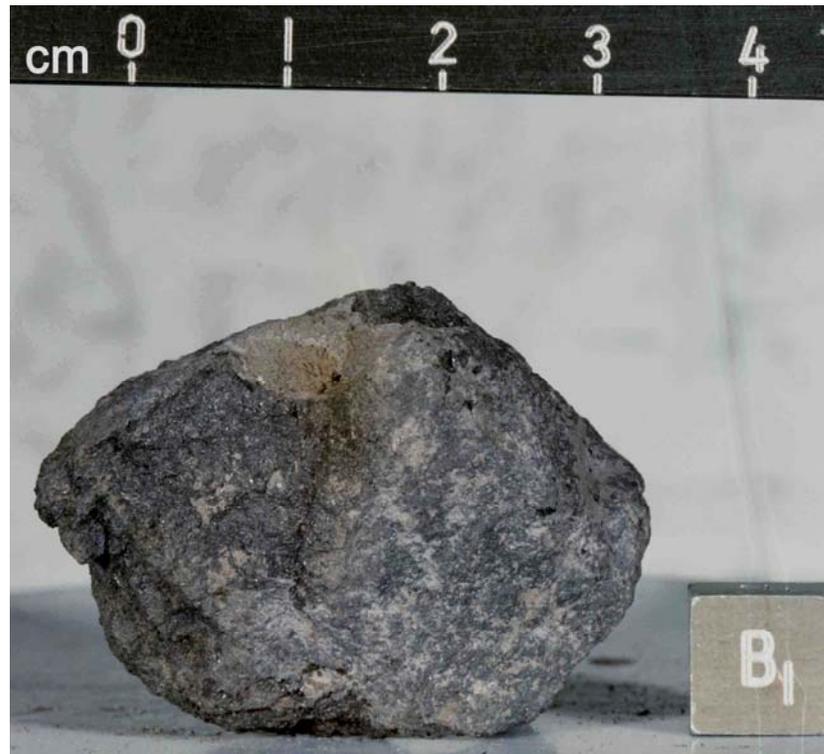


Figure 1: Photograph of mare basalt 78585. Scale is 1 cm. S73-21400.

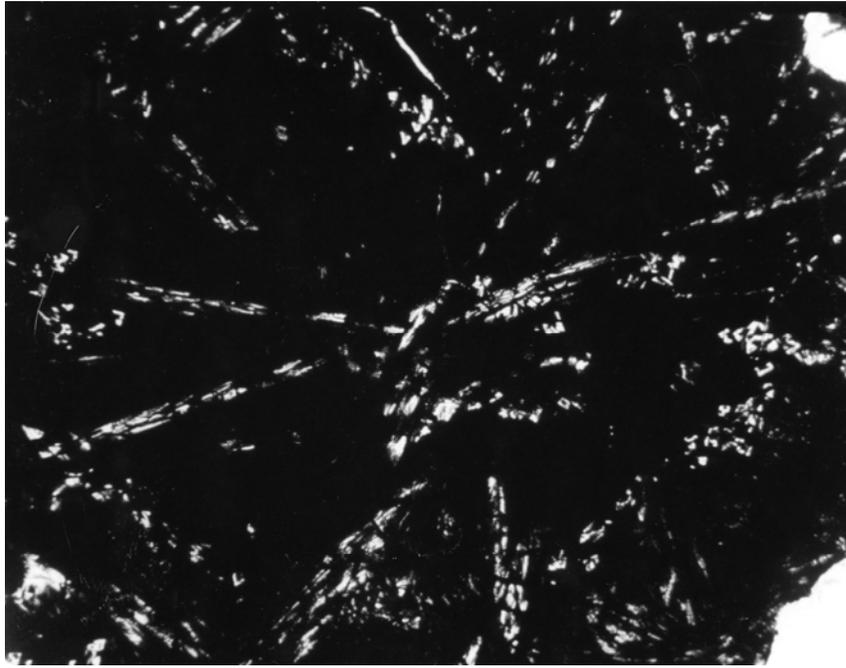


Figure 2: Photomicrograph of thin section 78585, 5. Field of view is 3 x 4 mm.

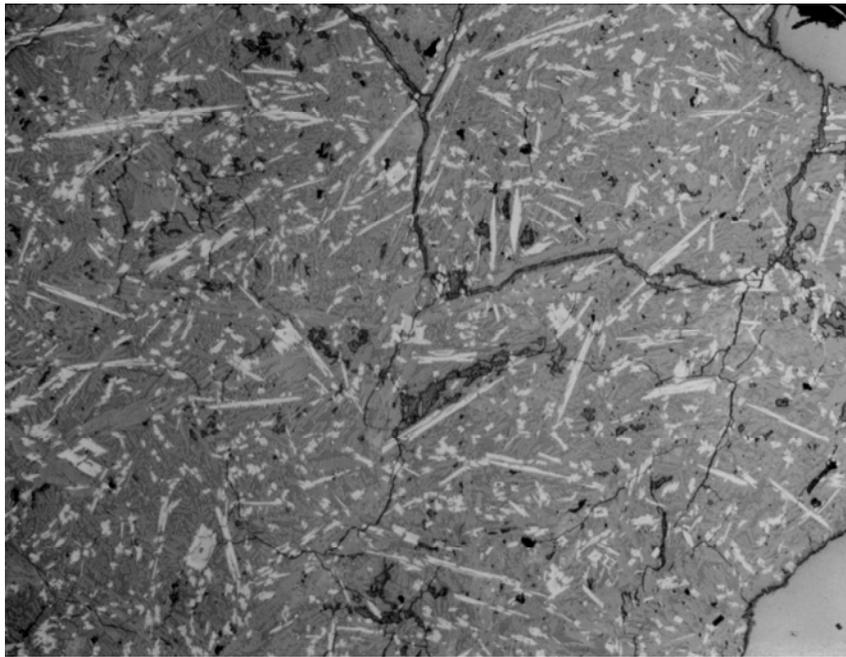


Figure 3: Reflected light photomicrograph ,of same area as Fig. 2.

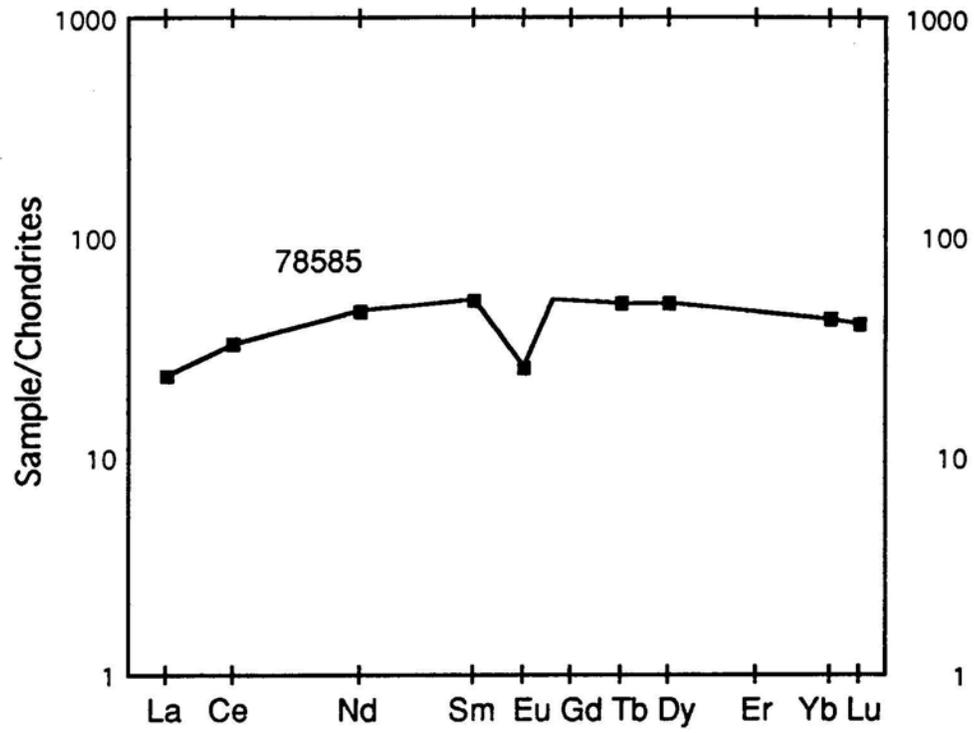


Figure 4: Normalized rare earth element diagram of 78585. Data from Ma et al. (1977).

Table 1: Whole-rock chemistry of 78585.
From Ma et al. (1977).

Split Technique	,7 INAA
SiO ₂ (wt%)	–
TiO ₂	12.2
Al ₂ O ₃	9.1
Cr ₂ O ₃	0.361
FeO	19.6
MnO	0.245
MgO	7
CaO	11
Na ₂ O	0.396
K ₂ O	0.041
Nb (ppm)	
Hf	6.4
Ta	1.6
Co	21
Sc	86
La	5.6
Ce	20
Nd	21
Sm	7.5
Eu	1.42
Gd	
Tb	1.8
Dy	12
Er	
Yb	6.9
Lu	0.97
Ge (ppb)	
Ir	
Au	