

78576**High-Ti Mare Basalt****11.64 g, 3.0 x 1.6 x 1.5 cm****INTRODUCTION**

Sample 78576 was collected as part of the large rake sample at Station 8. It is a coarse-grained, vuggy, ilmenite-rich mare basalt (Fig. 1).

PETROGRAPHY

The interior texture of 78576 is variolitic with coprecipitating plagioclase and pyroxene in radiating clusters (Fig. 2). Fig. 3 shows the pyroxene needles "end on" and also illustrates the chainlike behavior of the euhedral ilmenite crystals. The

mode is estimated as ~50% pyroxene, 29% plagioclase, and 18% ilmenite with trace olivine, silica, annalcolite, tranquillityite, zirconolite, and spinel.

Keil et al. (1974) and Warner et al. (1978f) refer to the texture as plagioclase-poikilitic.

MINERAL CHEMISTRY

Warner et al. (1978f) have reported the mineral compositions of 78576 (Fig. 4).

WHOLE-ROCK CHEMISTRY

The chemical composition of 78576 has been reported by Warner et al. (1975b) (Table 1 and Fig. 5). The very high TiO₂ content (13.6%) and REE pattern are typical of Apollo 17 basalts.

Trace element data indicate that 78576 is a Type B Apollo 17 basalt (see appendix).



Figure 1: Photograph of 78576. Scale is 1 cm. S73-21036.

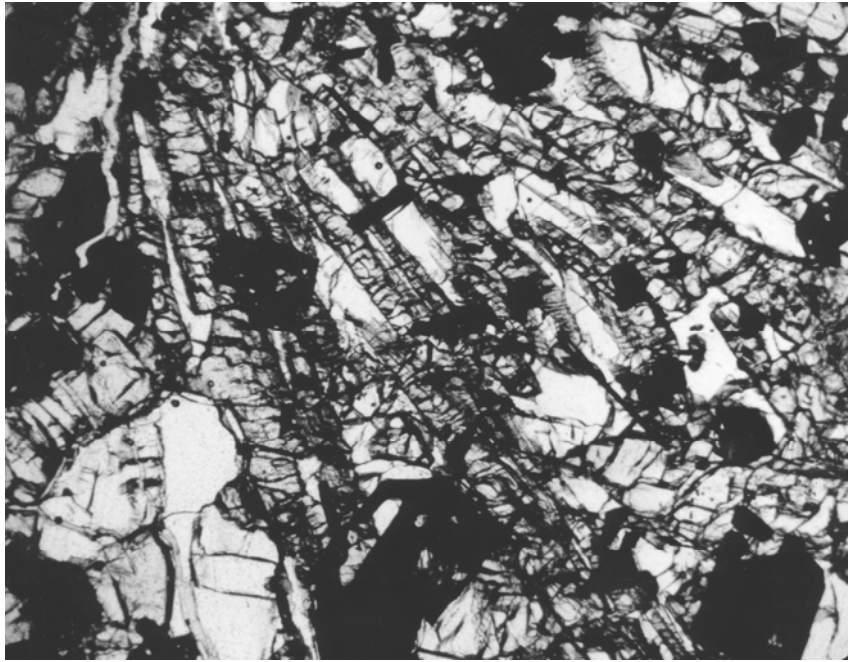


Figure 2: Photomicrograph of thin section 78576,6. Field of view is 3 x 4 mm.
Note radiating cluster of pyroxene and plagioclase crystals.

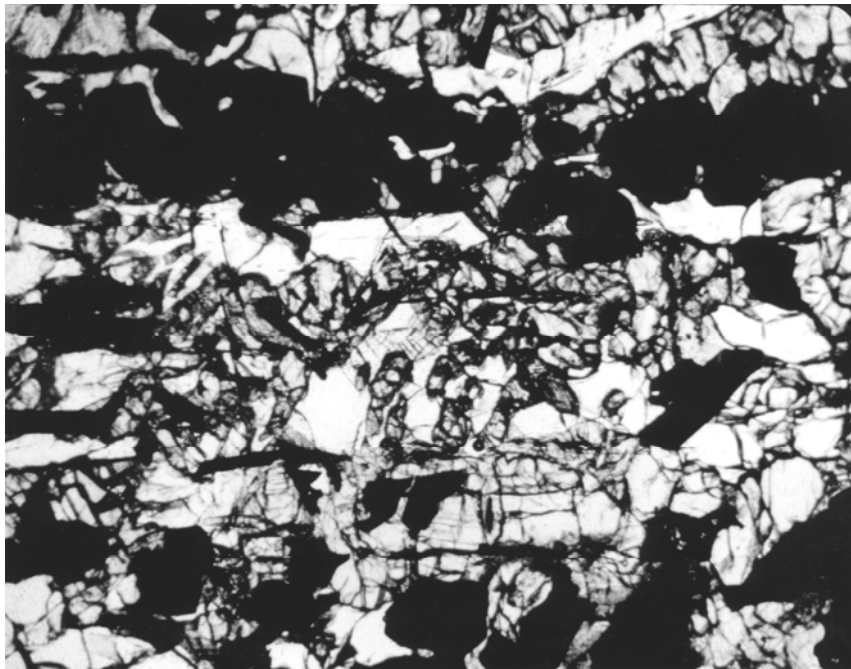


Figure 3: Photomicrograph of thin section 785;76,6. Field of view is 3 x 4 mm.
Note "end on" texture of pyroxene needles.

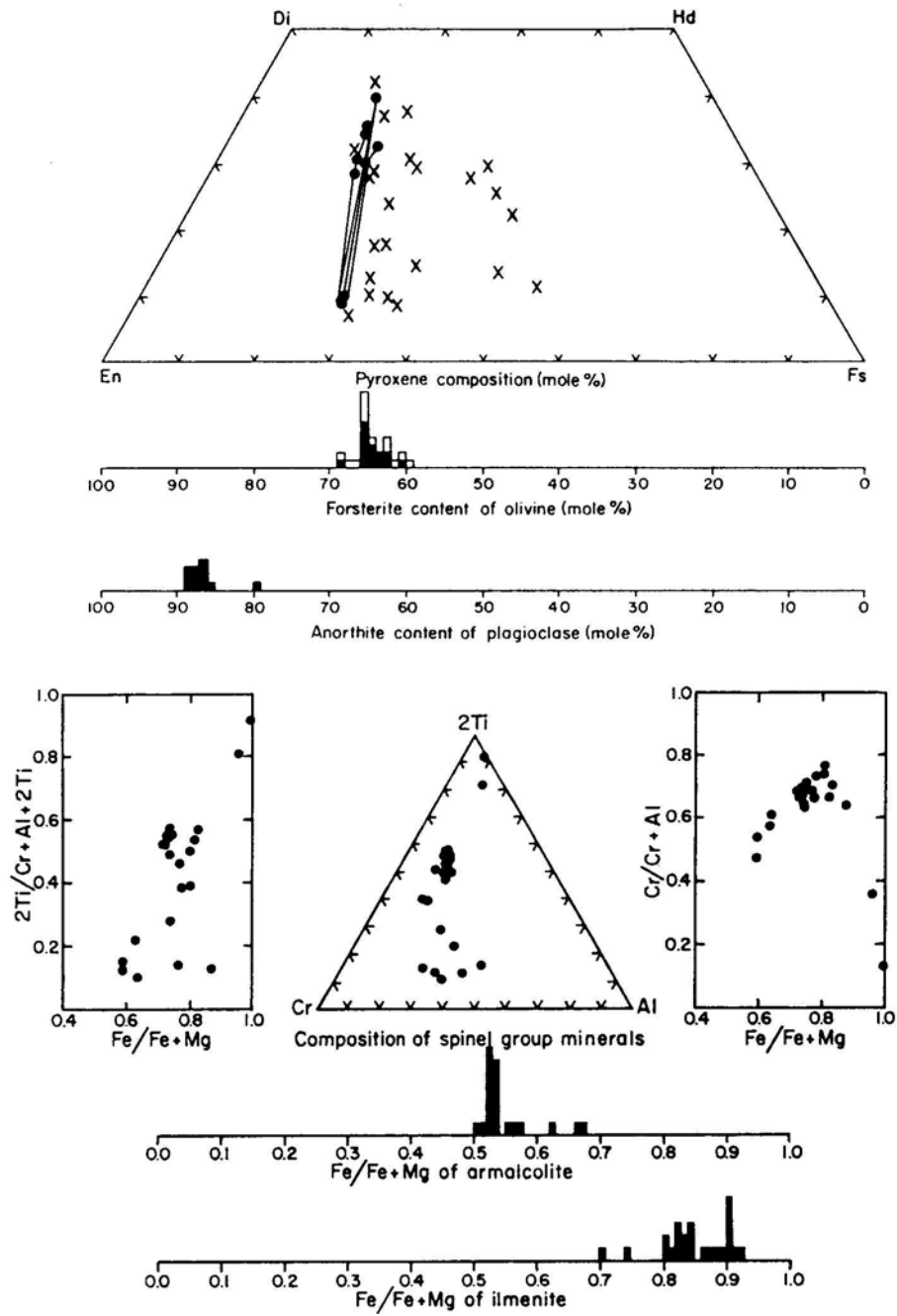


Figure 4: Chemical compositions of minerals in 78576. From Warner et al. (1978f).

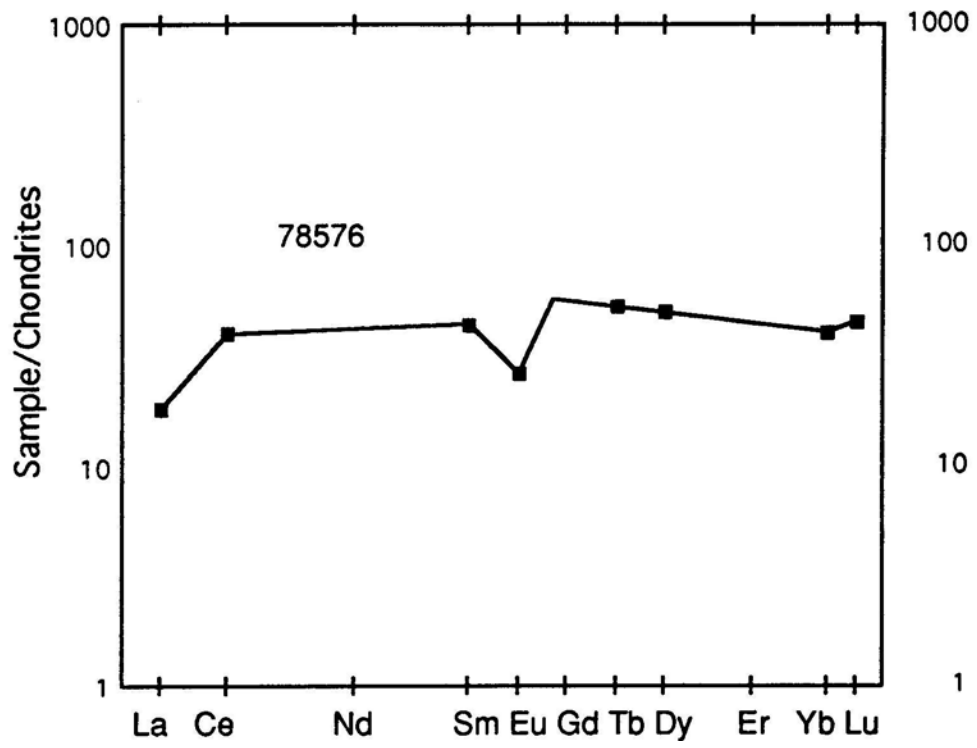


Figure 5: Normalized rare earth element diagram of 75576 Data from Warner et al. (1975b).

Table 1: Whole-rock chemistry of 78576.
From Warner et al. (1975b).

Split Technique	3 INAA
SiO ₂ (wt%)	–
TiO ₂	13.6
Al ₂ O ₃	8.2
Cr ₂ O ₃	0.60
FeO	19.1
MnO	0.23
MgO	9.0
CaO	9.4
Na ₂ O	0.35
K ₂ O	0.04
P ₂ O ₅	
Nb (ppm)	
Hf	6.8
Ta	1.5
Ni	
Co	24
Sc	82
La	4.3
Ce	24
Nd	
Sm	6.4
Eu	1.49
Gd	
Tb	1.9
Dy	12
Er	
Yb	6.5
Lu	1.1
Ge (ppb)	
Ir	
Au	