

75088**High-Ti Mare Basalt****1.992 g, 1.5 x 1 x 1 cm****INTRODUCTION**

75088 was described as a gray, angular basalt, with an aphanitic to subophitic fabric (Apollo 17 Lunar Sample Information Catalog, 1973). The surface of the original sample was freshly broken with some adhering dust. No zap pits or other cavities were noted.

PETROGRAPHY AND MINERAL CHEMISTRY

The petrography and mineral chemistry of 75088 has not been reported. During the preparation of this catalog, we examined thin section 75088,4. This is of a fine-grained basalt containing 0.4 mm olivine and ~1 mm ilmenite phenocrysts (Fig. 1). Some olivines are euhedral

and some are corroded. The groundmass (~ 0.1 mm) is composed of plagioclase, ilmenite, and pyroxene and has no flow texture. Areas of clear interstitial glass (~ 0.1 mm) are present and are evenly distributed throughout the slide! The overall texture is variolitic to subvariolitic. The ilmenite contains no rutile or spinel exsolution features. No silica or armalcolite were found. Small (< 0.05 mm) clots of FeNi metal and troilite form interstitial phases and are occasionally associated with ilmenite.

WHOLE-ROCK CHEMISTRY

Warner et al. (1975) reported the whole-rock chemistry for 75088,1. These authors reported a MG# of 43.7 and TiO₂ contents

of 11.9 wt% (Table 1). 75088 is classified as a Type A Apollo 17 high-Ti basalt, using the scheme of Rhodes et al. (1976). The REE profile is LREE-depleted with a maximum in the middle REE. The Eu anomaly is not well defined as Gd or Tb was not analyzed by Warner et al. (1975). We estimated the negative Eu anomaly to be $(Eu/Eu^*)_N \sim 0.5$.

PROCESSING

Of the original 1.992g of 75088,0, approximately 1.7g remains. Thin section ,4 was made from the "hot" INA sample ,1.

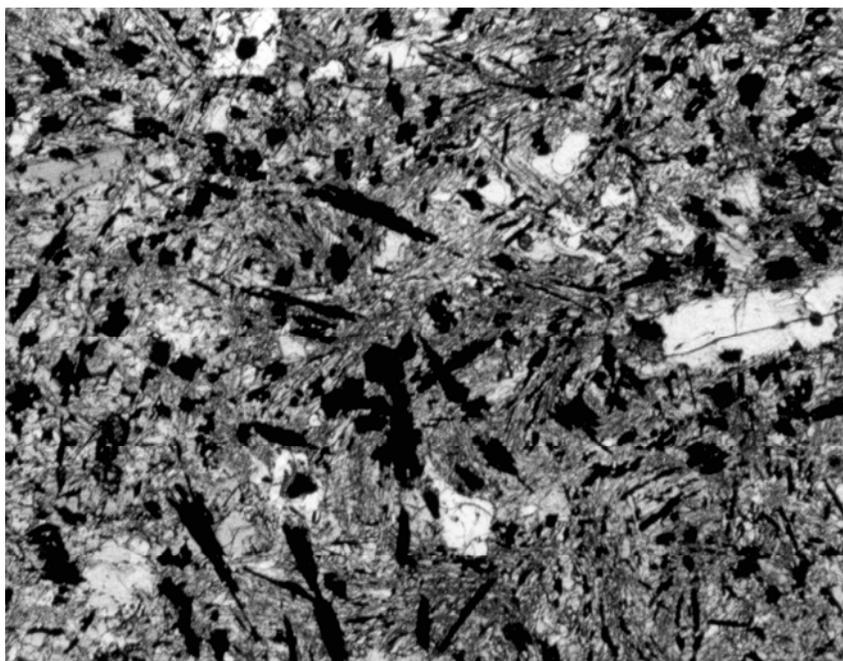


Figure 1: Photomicrograph of 75088,4. Field of view = 2.5 mm.

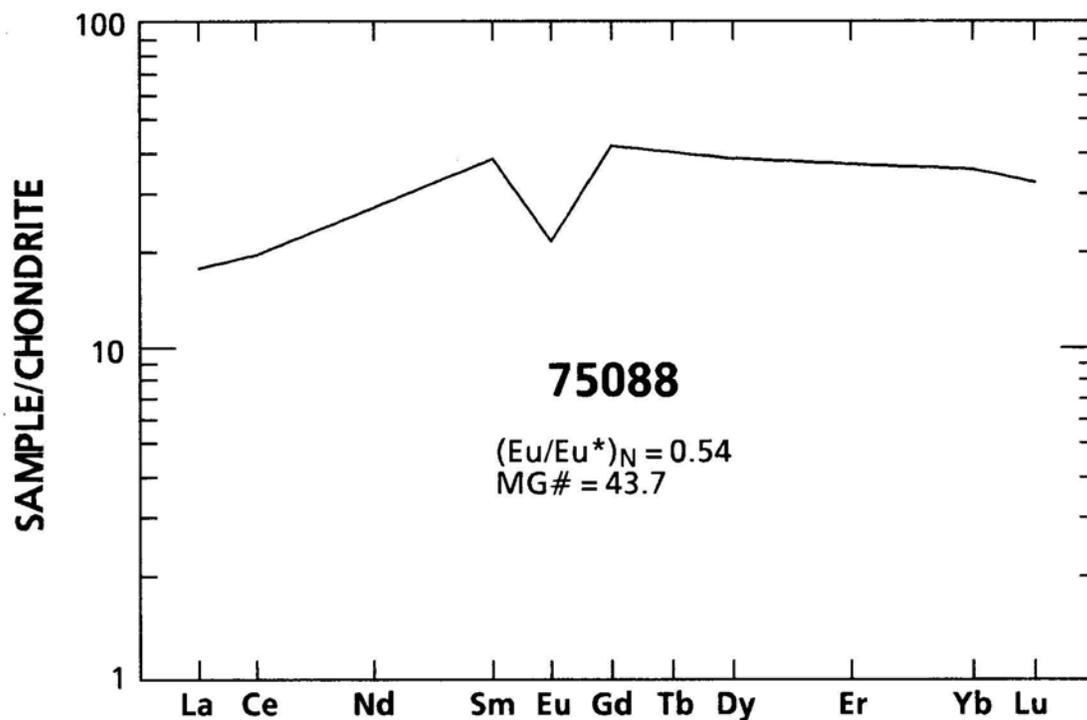


Figure 2: Chondrite-normalized rare-earth-element profile of 75088, after Warner et al. (1975).

Table 1: Whole-rock chemistry of 75088.

Data from Warner et al. (1975).

Sample 75088,1 Method N		Sample 75088,1 Method N	
SiO ₂		Ni	
TiO ₂	11.9	Co	18.9
Al ₂ O ₃	10.4	V	92
Cr ₂ O ₃	0.310	Sc	87
FeO	20.4	Cr	
MnO	0.255	La	5.7
MgO	8.9	Ce	
CaO	11.8	Nd	
Na ₂ O	0.379	Sm	7.9
K ₂ O	0.06	Eu	1.64
P ₂ O ₅		Gd	
S		Tb	
Nb (ppm)		Dy	13
Zr		Er	
Hf		Yb	7.7
Ta		Lu	1.1
U		Ga	
Th		F	
W		Cl	
Y		C	
Sr		N	
Rb		H	
Li		He	
Ba		Ge (ppb)	
Cs		Ir	
Be		Au	
Zn		Ru	
Pb		Os	
Cu			

Analysis by: N = INAA.