

71548**High-Ti Mare Basalt****25.46 g****INTRODUCTION**

See "Rake Sample Descriptions" and "Table of Rake Samples", as well as Fig. 1.

PETROGRAPHY AND MINERAL CHEMISTRY

Warner et al. (1978) reported the petrography and mineral chemistry of 71548. During the preparation of this catalog, we examined thin section 71548,4 and found it to be a medium-grained (0.2-0.6mm), sub-ophitic basalt. It is comprised of blocky, pink pyroxene (some with olivine cores ~0.1mm) and plagioclase. Blocky ilmenite (up to 1mm) overlays the

plagioclase, and pyroxene and minor interstitial, opaque glass is associated with this ilmenite. Rutile and chromite exsolution features are present in the ilmenites. SiO₂ (0.2-0.5mm) is conspicuous, and native Fe and troilite (< 0.1 mm) are disseminated throughout. No armalcolite was observed.

Murali et al. (1977) reported the whole-rock composition of 71548,1 in a study of Apollo 17 rake samples

WHOLE-ROCK CHEMISTRY

(Table 1). Based on the whole-rock classification of Rhodes et al. (1976) and Warner et al. (1979), this sample is classified as a Type A Apollo 17

high-Ti basalt. This sample contains 12.4 wt% TiO₂ with a MG# of 43.6. The REE profile (Fig. 2) is LREE-depleted with a maximum at Sm. The HREE exhibit a slight decrease from the MREE, but are still more abundant (relative to chondrites) than the LREE (Fig. 2) A negative Eu anomaly is present [(Eu/Eu*)_N = 0.561.

PROCESSING

Of the original 25.46g of 71548,0, approximately 22.828 remains. 71548,2 weighs 2.228. 71547,1 was used for IN AA, and thin section,4 was taken from this irradiated sample.



Figure 1: Hand specimen photograph of 71548,0. Small divisions on scale are in millimeters.

Table 1: Whole-rock chemistry of 71548.
Data from Murali et al. (1977).

Sample 71548,1 Method N		Sample 71548,1 Method N	
SiO ₂ (wt %)		Cu	
TiO ₂	12.4	Ni	
Al ₂ O ₃	8.7	Co	17.4
Cr ₂ O ₃	0.455	V	110
FeO	19.6	Sc	77
MnO	0.238	La	6.5
MgO	8.5	Ce	38
CaO	9.3	Nd	
Na ₂ O	0.41	Sm	9.9
K ₂ O	0.057	Eu	2.01
P ₂ O ₅		Gd	
S		Tb	2.6
Nb (ppm)		Dy	17
Zr		Er	
Hf	9.8	Yb	9.4
Ta	1.0	Lu	1.43
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	

Analysis by: N = INAA.

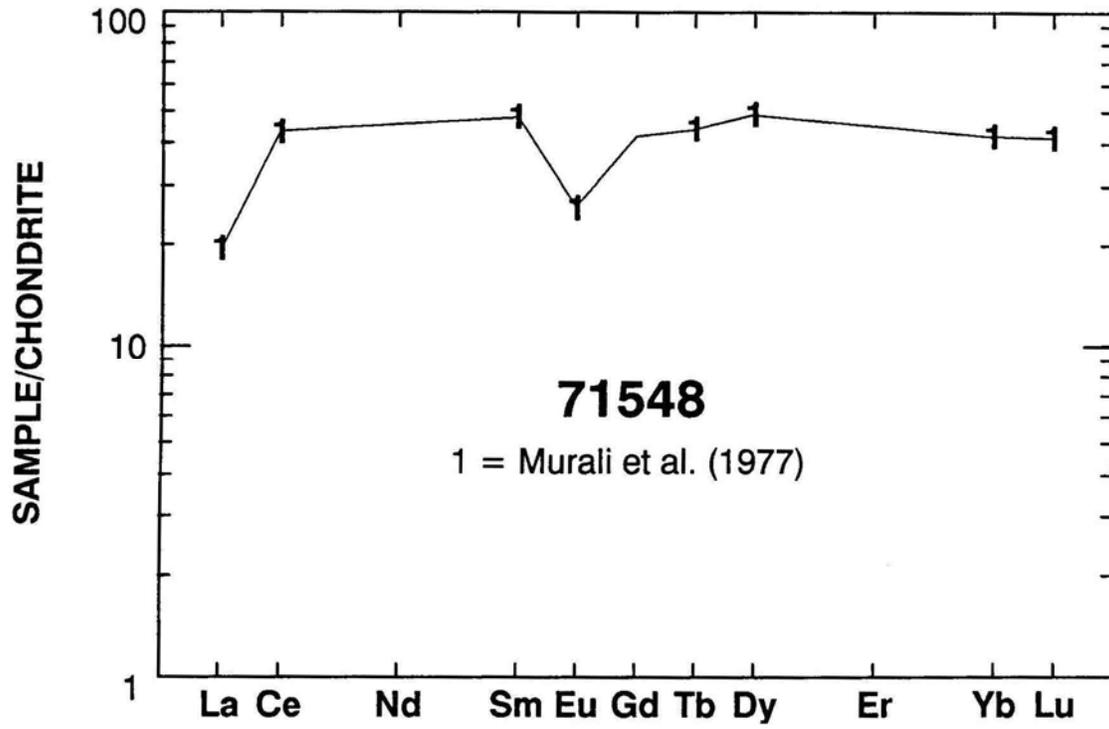


Figure 2: Chondrite-normalized rare-earth element plot of 71548. Data from Murali et al. (1977).