

71568**High-Ti Mare Basalt****10.02 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 71568. During the preparation of this catalog, we examined thin section 71568, 5 and found it to be a coarse-grained (up to 1.5mm), plagioclase-poikilitic basalt. It is comprised of plagioclase and pyroxene and interstitial, blocky ilmenite. Cr-ulvospinel is

present (~0.1mm). Rare rutile and chromite exsolution was observed in the ilmenite. Native Fe and troilite (up to 0.2mm) form interstitial phases. Large areas (up to 0.5mm) of interstitial SiO₂ are conspicuous. No armalcolite or olivine was found.

WHOLE-ROCK CHEMISTRY

Murali et al. (1977) reported the whole-rock composition of 71568, 1 in a study of Apollo 17 rake samples (Table 1). 71568 is classified as a Type A Apollo 17 high-Ti basalt, based on the whole-rock classification of Rhodes et al. (1976) and Warner et al. (1979). This sample

contains 9.8 wt% TiO₂, with a MG# of 42.1. The REE profile (Fig. 2) is LREE-depleted with a maximum in the MREE. The HREE are flat at ~40 times chondritic abundances (Fig. 2). A negative Eu anomaly is present [(Eu/Eu*) N = 0.60].

PROCESSING

Of the original 10.02g of 71568,0, approximately 8.96g remains. 71568, 1 was used for INAA, and thin section,5 was taken from this irradiated sample.



Figure 1: Hand specimen photograph of 71568,0. Small divisions on scale are in millimeters.

Table 1: Whole-rock chemistry of 71568.
Data from -Nlurali et al. (1977).

Sample 71568,1 Method N		Sample 71568,1 Method N	
SiO ₂ (wt %)		Cu	
TiO ₂	9.8	Ni	
Al ₂ O ₃	10.1	Co	14.7
Cr ₂ O ₃	0.247	V	27
FeO	19.4	Sc	79
MnO	0.249	La	5.3
MgO	7.9	Ce	29
CaO	13.4	Nd	
Na ₂ O	0.46	Sm	8.5
K ₂ O	0.058	Eu	1.91
P ₂ O ₅		Gd	
S		Tb	2.4
Nb (ppm)		Dy	14
Zr		Er	
Hf	8.6	Yb	8.1
Ta	1.6	Lu	1.36
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.

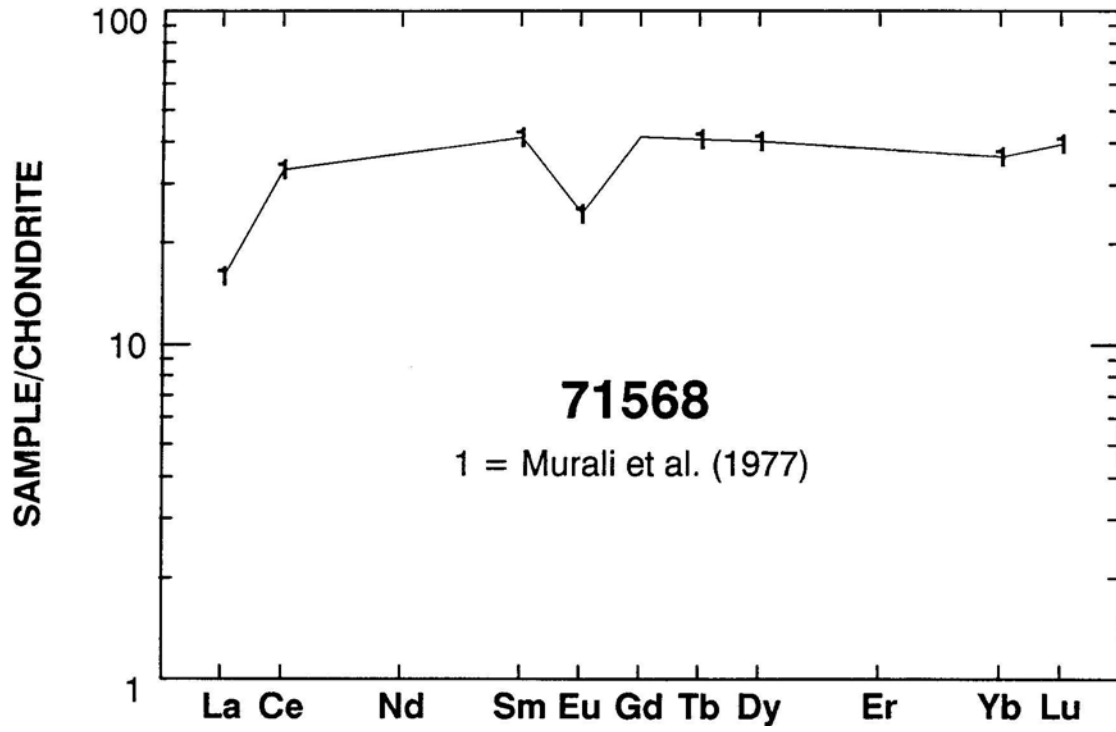


Figure 2: Chondrite-normalized rare-earth element plot of 71568. Data from Murali et al. (1977).