

71525**High-Ti Mare Basalt****3.90 g****INTRODUCTION**

See "Rake Sample Descriptions" and "Table of Rake Samples"

PETROGRAPHY AND MINERAL CHEMISTRY

The mineralogy and petrography of 71525 was described by Warner et al. (1978). During the preparation of this catalog, we examined thin section 71525,3 and found it to be a fine- to medium-grained basalt (0.1-0.5mm - Fig. 1). It is comprised of intergrown plagioclase and pyroxene "bow-tie" structures, pink, blocky pyroxene, and corroded olivines (Fig. 1). The olivines contain euhedral chromite inclusions

(< 0.05mm) (Fig. 1). Ilmenite (up to 1 mm) is interstitial and is also present in the groundmass.

Armstrongite forms the cores to some of the larger ilmenites. Rutile and chromite exsolution lamellae are present in the ilmenite. Opaque glass, native Fe, and troilite are associated with ilmenite, although these latter two minerals are also present as interstitial phases. Interstitial SiO₂ is conspicuous. Murali et al. (1977) reported the whole-rock composition of

et al. (1979), plus the criteria of Neal et al. (1990), 71525 is classified as a Type B2 Apollo 17 high-Ti basalt. This sample contains 12.9 wt% TiO₂ with a MG# of 41.3. The REE profile is LREE-depleted (Fig. 2) with a maximum in the MREE. The HREE gently decrease from the MREE, but are still present in greater abundances (relative to chondrites) than the LREE (Fig. 2). A negative Eu anomaly is present [(Eu/Eu*)_N = 0.51.

WHOLE-ROCK CHEMISTRY

71525,1 in a study of Apollo 17 rake samples (Table 1). Based on the whole-rock classification of Rhodes et al. (1976) and Warner

PROCESSING

Of the original 3.90g of 71525,0, a total of 3.51g remains. 71525,1 was used for INAA and thin section,3 was taken from this irradiated sample.

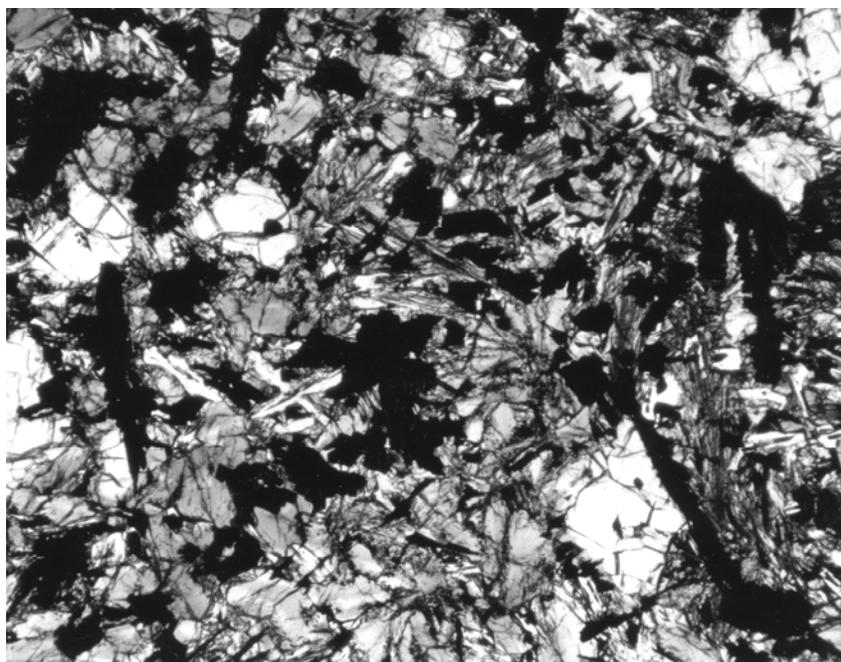


Figure 1: Photomicrograph of 71525,3 showing olivine and ilmenite phenocrysts set in a sub-variolitic matrix. Field of view = 2.5 mm.

Table 1: Whole-rock chemistry of 71525.
Data from Murali et al. (1977).

Sample 71525,1 Method N		Sample 71525,1 Method N	
SiO ₂ (wt %)		Cu	
TiO ₂	12.9	Ni	
Al ₂ O ₃	8.8	Co	20.5
Cr ₂ O ₃	0.392	V	106
FeO	20.8	Sc	85
MnO	0.246	La	5.8
MgO	8.2	Ce	27
CaO	11.0	Nd	
Na ₂ O	0.39	Sm	7.5
K ₂ O	0.053	Eu	1.43
P ₂ O ₅		Gd	
S		Tb	2.1
Nb (ppm)		Dy	13
Zr		Er	
Hf	6.6	Yb	7.1
Ta	1.5	Lu	0.98
U		Ga	
Th		F	
W		Cl	
Y		C	
Sr		N	
Rb		H	
Li		He	
Ba		Ge (ppb)	
Cs		Ir	
Be		Au	2±1
Zn		Ru	
Pb		Os	

Analysis by: N = INAA.

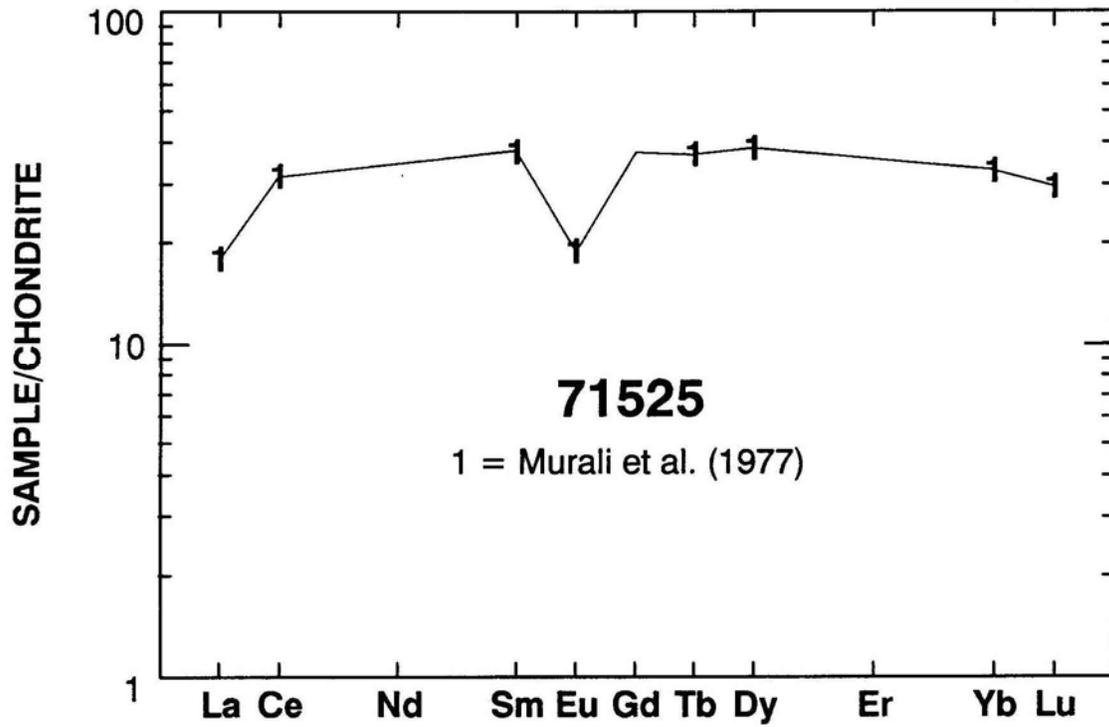


Figure 2: Chondrite -normalized rare-earth element plot of 71525. Data from Murali et al. (1975).