

**71529****High-Ti Mare Basalt  
6.025 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 71529. During the preparation of this catalog we examined thin section 71529,4 and found it to be a fine- to medium-grained (0.2-0.5mm) basalt. It is comprised of plagioclase-pyroxene "bow-tie" intergrowths (unevenly

distributed) and blocky, pink/brown pyroxenes (up to 0.5mm). Corroded olivines, containing euhedral chromite inclusions (< 0.05mm) and with a mantle of pink pyroxene, are present. Ilmenite phenocrysts reach up to 1 mm long with "sawtooth" margins and also form an interstitial groundmass phase. Minor rutile and chromite exsolution in the ilmenite was observed, but no armalcolite was found. Opaque glass, native Fe, and troilite are associated with the ilmenite, although the latter two minerals also form <0.05mm interstitial phases. Minor interstitial SiO<sub>2</sub> is also present.

**WHOLE-ROCK CHEMISTRY**

Murali et al. (1977) reported the whole-rock composition of 71529,1 in a study of Apollo 17 rake samples (Table 1). Based on the classifications of Rhodes et al. (1976) and Warner et al. (1979), 71529 is classified as a Type A Apollo 17 high-Ti basalt. This sample contains 11.9 wt% TiO<sub>2</sub> with a MG# of 43.1. The REE profile (Fig. 2) is LREE-depleted with a maximum in the MREE. The HREE are more abundant (relative to chondrites) than the LREE. A negative Eu anomaly is present [(Eu/Eu\*)<sub>N</sub> = 0.53].



Figure 1: Hand specimen photograph of 71529,0. Small divisions on scale are in millimeters.

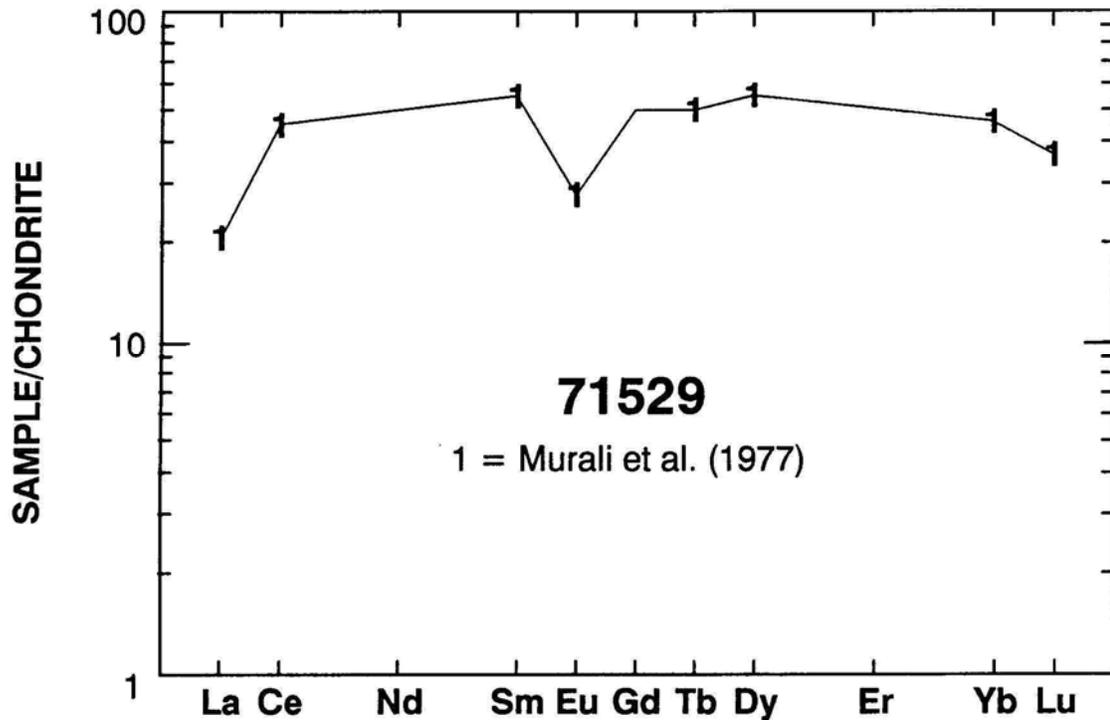


Figure 2: Chondrite -normalized rare-earth element plot of 71529. Data from Murali et al. (1977.)

---

## PROCESSING

Of the original 6.0258 of 71529,0, a total of approximately 5.368 remains. 71529,1 was used for INAA and the thin section ,4 was taken from this irradiated sample.

**Table 1: Whole-rock chemistry of 71529.**

Data from Murali et al. (1977).

Sample 71529,1 Method N		Sample 71529,1 Method N	
SiO <sub>2</sub> (wt %)		Cu	
TiO <sub>2</sub>	11.9	Ni	
Al <sub>2</sub> O <sub>3</sub>	8.7	Co	17.3
Cr <sub>2</sub> O <sub>3</sub>	0.400	V	94
FeO	19.8	Sc	79
MnO	0.242	La	6.8
MgO	8.4	Ce	39
CaO	11.2	Nd	
Na <sub>2</sub> O	0.42	Sm	11.2
K <sub>2</sub> O	0.081	Eu	2.14
P <sub>2</sub> O <sub>5</sub>		Gd	
S		Tb	2.9
Nb (ppm)		Dy	19
Zr		Er	
Hf	9.2	Yb	10.1
Ta	1.8	Lu	1.24
U		Ga	
Th		F	
W		Cl	
Y		C	
Sr		N	
Rb		H	
Li		He	
Ba		Ge (ppb)	
Cs		Ir	
Be		Au	1.9 ± 0.6
Zn		Ru	
Pb		Os	

Analysis by: N = INAA.