71556

High-Ti Mare Basalt
29.14 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 71556. During the preparation of this catalog, we examined thin section 71556,4 and found it to be a Nvellcrystallized, coarse-grained (0.4-1mm), sub-ophitic to plagioclase-poikilitic basalt (Fig. 2). It is comprised of pink pyroxene and plagioclase, with olivine forming rounded cores to the larger pyroxenes. Blocky ilmenites (0.4-1 mm) form an intersertal texture with plagioclase and pyroxene, and contain rutile and chromite exsolution features. Interstitial SiO_2 (0.2-0.5mm) is present. Native Fe and troilite (up to 0.2mm) are disseminated throughout. No armalcolite was observed.

WHOLE-ROCK CHEMISTRY

Murali et al. (1977) reported the whole-rock composition of 71556, 1, in a study of Apollo 17 rake samples (Table 1). Sample 71556 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 11.7 wt% TiO_2, with a MG# of 40.2. The REE profile (Fig. 3) is relatively flat, except for La. However, the Ce analyses of Murali et al. (1977) tend to be higher than expected, due to the large uncertainties associated with the analysis of Ce by INA. The LREE-depleted nature of Apollo 17 basalts indicates that the quoted Ce abundance in Table 1 is a maximum

Figure 1: Hand specimen photograph of 71556,0. Cubic scale = 1 cm^3.

Figure 2: Photomicrograph of 71556,4. A sub-ophitic to plagioclase poikilitic texture is evident.

and that in reality, Ce is probably present in lower quantities than 35 ppm. The HREE are flat at an abundance of ~43 times chondritic abundances (Fig. 3) A negative Eu anomaly is present [$(Eu/Eu^*)_N = 0.68$].

PROCESSING

Of the original 29.14g of 71556,0, approximately 28.338 remains. 71556,1 was used for INAA, and thin section,4 was taken from this irradiated sample.

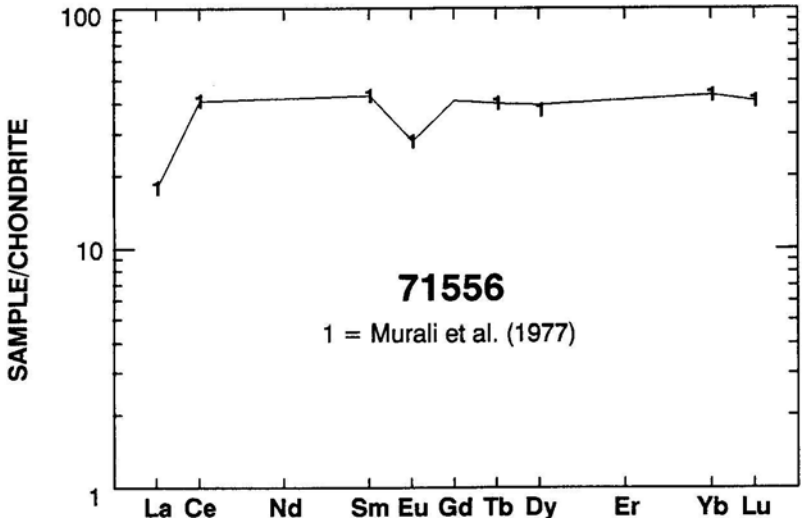

Figure 3: Chondrite -normalized rare-earth element plot of 71556. Data from Murah et al. (1977).

Table 1: Whole-rock chemistry of 71556.
Data from Murali et at. (1977).

	Sample 71556,1 Method N		Sample 71556,1 Method N
SiO_2 (wt %)		Cu	
TiO_2	11.7	Ni	
Al_2O_3	10.0	Co	17.2
Cr_2O_3	0.355	V	74
FeO	19.9	Sc	70
MnO	0.236	La	5.8
MgO	7.5	Ce	35
CaO	10.5	Nd	
Na_2O	0.45	Sm	8.6
K_2O	0.056	Eu	2.11
P_2O_5		Gd	
S		Tb	2.3
Nb (ppm)		Dy	15
Zr		Er	
Hf	8.3	Yb	9.4
Ta	1.7	Lu	1.37
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.