

71086**High-Ti Mare Basalt**
3.329 g, 3 x 2 x 0.7 cm**INTRODUCTION**

71086 (Fig. 1) was described as a medium dark gray, fine-grained, homogeneous basalt (Apollo 17 Lunar Sample Information Catalog, 1973). This basalt contains no glass-lined zap pits, but one or two possible relict pits. Up to 50% of the surface is covered with cavities (Fig. 1) containing ilmenite crystals.

This sample was collected from Station 1A.

PETROGRAPHY AND MINERAL CHEMISTRY

Warner et al. (1979) described the general petrography and mineral chemistry of 71086, but only within the confines of their Type B Apollo 17 high-Ti

basalts. As such, this sample was not specifically mentioned. During the preparation of this catalog, we examined thin section 71086,5, finding it to be comprised of interlocking "bow-tie" structures of pyroxene and plagioclase. Grain size ranges from 0.1mm to 0.3mm. Corroded olivine phenocrysts occur (up to 0.6mm), but some have been reacted out to only form cores in



Figure 1: Hand specimen photograph of 71086,0.

pink pyroxene. Ilmenite occurs as a groundmass phase, and no armalcolite is present. Native Fe and troilite form interstitial phases.

WHOLE-ROCK CHEMISTRY

Ma et al. (1979) and Warner et al. (1979) reported the same analysis for 71086 (Table 1). Warner et al. classified 71086 as

a Type B Apollo 17 high-Ti basalt, containing 11.6 wt% TiO₂ with a MG# of 42.5. 71086 is further classified as a Type B2 basalt using the criteria of Neal et al. (1990). The REE profile (Fig. 2) is LREE-depleted, with a negative Eu anomaly ($[Eu/Eu^*]_N = 0.57$). The middle and heavy REE abundances are approximately constant at 35 times chondritic values.

PROCESSING

Of the original 3.329g of 71086,0, a total of 2.93g remains. 71086,2 was irradiated for INAA, and thin section 71086,5 was taken from this irradiated sample.

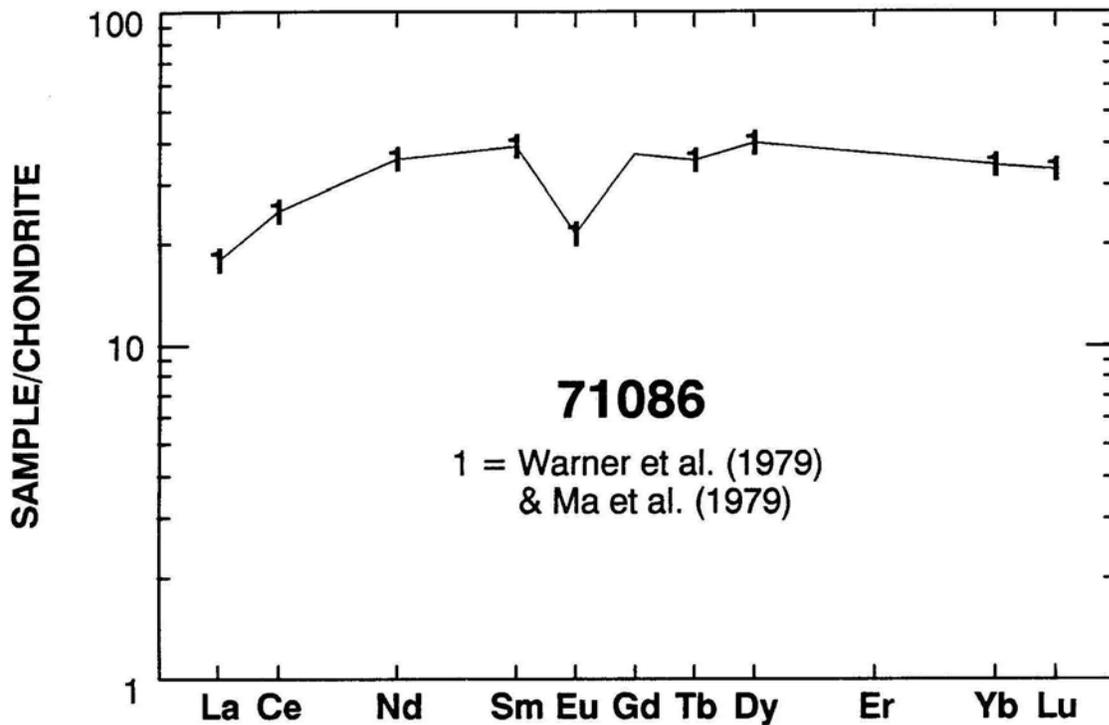


Figure 2: Chondrite-normalized rare-earth element profile of 71086.

Table 1: Whole-rock chemistry of 71086.
 Data from Ma et al. (1979) and Warner et al. (1979) (same analysis).

	71086,2 I		71086,2 I
SiO ₂ (wt %)		Cu	
TiO ₂	11.6	Ni	
Al ₂ O ₃	10.0	Co	18
Cr ₂ O ₃	0.312	V	102
FeO	19.3	Sc	84
MnO	0.268	La	6.0
MgO	8	Ce	22
CaO	10.8	Nd	23
Na ₂ O	0.381	Sm	8.1
K ₂ O	0.050	Eu	1.68
P ₂ O ₅		Gd	
S		Tb	2.1
Nb (ppm)		Dy	14
Zr		Er	
Hf	7.4	Yb	7.7
Ta	1.7	Lu	1.15
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	

I = analysis by INAA.