

71565**High-Ti Mare Basalt****24.09 g****INTRODUCTION**

See "Rake Sample Descriptions" and "Table of Rake Samples", as well as Fig. 1.

PETROGRAPHY AND MINERAL CHEMISTRY

Warner et al. (1975bc,1976ab, 1978) reported the petrography and mineral chemistry of 71565. Warner et al. (1975c) described 71565 as a poikilitic ilmenite basalt, but did not specifically mention the petrography or mineral chemistry in their study

of Apollo 17 rake samples. During the preparation of this catalog, we examined thin section 71565,6 and found it to be a coarse-grained (0.5-2.0 mm) plagioclase-poikilitic basalt. It is dominated by plagioclase and pink/brown pyroxene. Olivine forms rounded cores (~0.1mm) in the larger pyroxenes, and these olivines contain euhedral chromite inclusions (~0.005mm). Blocky ilmenite overlays the plagioclase-pyroxene network, which contains rutile and chromite exsolution features. Minor opaque glass is associated with this ilmenite. Native Fe

and troilite (0.1-0.2mm) is disseminated throughout. Interstitial SiO₂ is conspicuous and can reach up to 0.6 mm. No armalcolite was observed.

WHOLE-ROCK CHEMISTRY

Warner et al. (1975) reported the whole-rock composition of 71565,1 in a study of Apollo 17 rake samples (Table 1). 71565 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



Figure 1: Hand specimen photograph of 71565,0. Cubic scale = 1 cm³.

Contains 10.8 wt% TiO₂, with a MG# of 43.2. The REE profile (Fig. 2) is LREE-depleted with a maximum at Sm. The HREE are approximately constant at 40 times chondritic abundances. A negative Eu anomaly is present [(Eu/Eu*)_N = 0.64].

PROCESSING

Of the original 24.09g of 71565,0, approximately 22.538 remains. 71565,1 was subdivided into,9001, which was irradiated for INAA, and ,6 was made into a thin section.

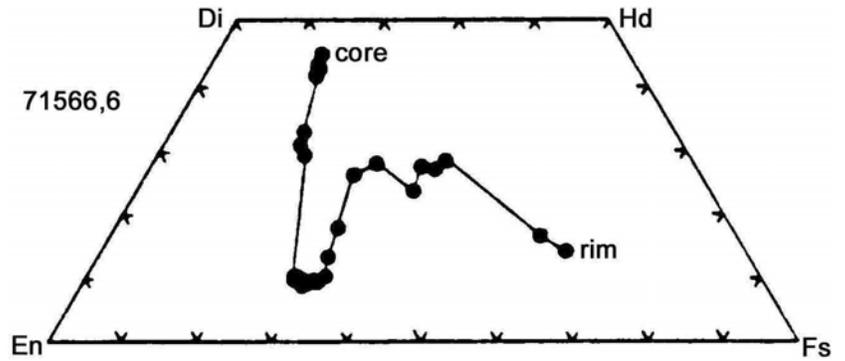


Figure 2: Chondrite-normalized rare-earth element profile of 71565. Data from Warner et al. (1975).

Table 1: Whole-rock chemistry of 71565.

Data from Warner et al. (1975).

Sample 71565,1 Method N		Sample 71565,1 Method N	
SiO ₂ (wt %)		Cu	
TiO ₂	10.8	Ni	
Al ₂ O ₃	10.1	Co	16.1
Cr ₂ O ₃	0.357	V	90
FeO	17.6	Sc	76
MnO	0.225	La	6.4
MgO	7.5	Ce	26
CaO	11.7	Nd	
Na ₂ O	0.43	Sm	9.2
K ₂ O	0.071	Eu	2.11
P ₂ O ₅		Gd	
S		Tb	2.3
Nb (ppm)		Dy	15
Zr		Er	
Hf	8.0	Yb	8.3
Ta	1.9	Lu	1.4
U		Ga	
Th		F	
W		Cl	
Y		C	
Sr		N	
Rb		H	
Li		He	
Ba		Ge (ppb)	
Cs		Ir	
Be		Au	
Zn		Eu	
Pb		Os	

Analysis by: N = INAA.