71526

High-Ti Mare Basalt
12.91 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 71526. During the preparation of this catalog we examined thin section 71526,4 and found it to be a fine- to medium-grained sub-ophitic basalt (Fig. 2). It is comprised of equigranular olivine and pyroxene (0.1-0.4mm) and the olivines exhibit no reaction rims of pyroxene. Olivines do contain euhedral chromite inclusions (< 0.05mm). Unoriented ilmenite phenocrysts (up to 0.7mm) are present (Fig. 2), exhibiting "sawtooth" margins. ilmenite is also a groundmass mineral along with plagioclase and pink pyroxene. Plagioclase and pyroxene very rarely exhibit "bow-tie" intergrowths. Interstitial glass, native Fe, and troilite are often associated with ilmenite. No armalcolite was identified.

WHOLE-ROCK CHEMISTRY

Murali et al. (1977) reported the whole-rock composition of 71526,2 in a study of Apollo 17 rake samples Table 1). Using the classification scheme of Rhodes et al. (1976) and Warner et al. (1979), plus the criteria of Neal et al. (1990), 71526 is classified as a Type B2 Apollo 17 high-Ti basalt. This sample contains 9.8 wt% TiO_2 with a MG# of 38.4. Vlurali et al. (1977) distinguished 71526 by its low V, TiO_2, MgO, and Cr_2O_3 contents and suggests that it

Figure 1: Hand specimen photograph of 71526,0. Small divisions on scale are in millimeters.

Figure 2: Photomicrograph of 71526,4 showing ilmenite phenocrysts with sawtooth margins and olivine microphenocrysts set in a sub-variolitic matrix. Field of view = 2.5 mm.

formed part of a distinct compositional group. The REE profile is LREE-depleted (Fig. 3) with approximately constant middle and heavy REE abundances at 35 times chondritic levels. A negative Eu anomaly is present [(Eu/Eu*)N = 0.601.

PROCESSING

Of the original 12.91g of 71526,0, a total of 11.948 remains. 71526,2 was used for INAA, and thin section ,4 was taken from this irradiated sample.

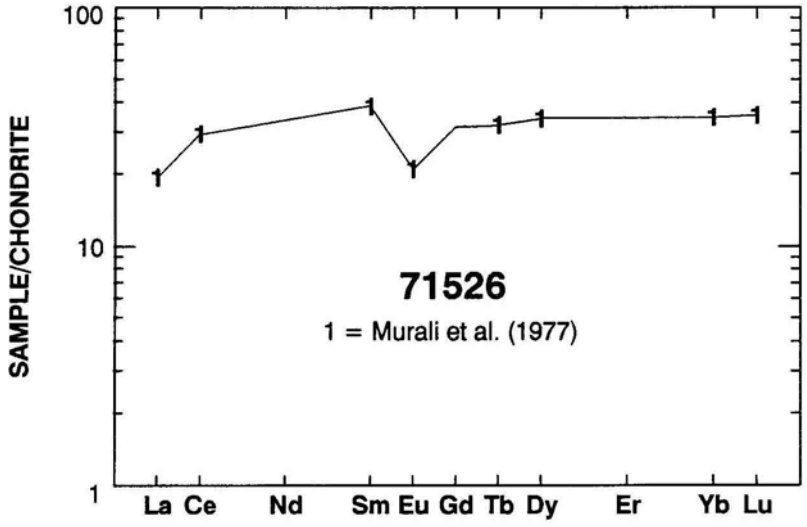

Figure 3: Chondrite-normalized rare-earth element plot of 71526. Data from Murali et al. (1977).

Table 1: Whole-rock chemistry of 71526.
Data from Murali et al. (1977).

	Sample 71526,2 Method N		Sample 71526,2 Method N
SiO_2 (wt %)		Cu	
TiO2	9.8	Ni	
Al_2O_3	9.9	Co	16.7
Cr_2O_3	0.328	V	40
FeO	19.4	Sc	77
MnO	0.263	La	6.5
MgO	6.8	Ce	26
CaO	13.3	Nd	
Na_2O	0.46	Sm	8.0
K_2O	0.055	Eu	1.65
P_2O_5		Gd	
S		Tb	1.9
Nb (ppm)		Dy	12
Zr		Er	
Hf	6.5	Yb	7.8
Ta	1.6	Lu	1.22
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.