

71549**High-Ti Mare Basalt****7.90 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 71549. During the preparation of this catalog, we examined thin section 71549, 5 and found it to be a coarse-grained (0.4-1mm), sub-ophitic/

intersertal to plagioclasepoikilitic basalt. It is comprised of pink, blocky pyroxene (larger grains have ~0.1mm rounded olivine cores) and plagioclase (Fig. 2). Ilmenite up to 1mm overlays this network, and these rarely contain "sawtooth" margins. Rutile and chromite exsolution are common in the ilmenite and minor opaque glass is associated with this mineral. Native Fe and troilite (<0.1mm) are disseminated throughout. Conspicuous interstitial SiO_2 is present (up to 0.3mm). No armalcolite was observed.

WHOLE-ROCK CHEMISTRY

Murali et al. (1977) reported the whole-rock composition of 71549, 2 in a study of Apollo 17 rake samples (Table 1). Using the classification of Rhodes et al. (1976) and Warner et al. (1979), 71549 is classified as a Type A Apollo 17 high-Ti basalt. This sample contains 12.2 wt% TiO_2 , with a MG# of 41.7. The REE profile (Fig. 3) is LREE-depleted with a maximum at Sm. Murali et al. (1977) reported a Ce abundance of 40 ppm, but

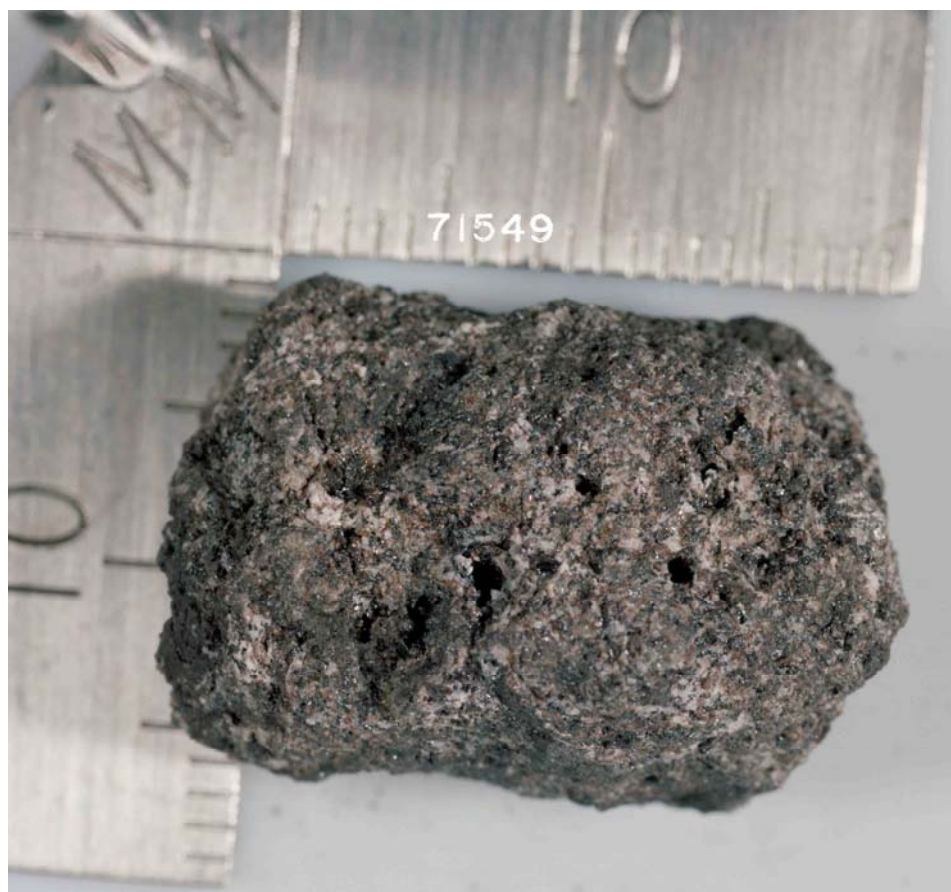


Figure 1: Hand specimen photograph of 71549,0. Small divisions on scale are in millimeters.

Table 1: Whole-rock chemistry of 71549.

Data from Murali et al. (1977).

	71549,2 N		71549,2 N
SiO ₂ (wt %)		Cu	
TiO ₂	12.2	Ni	
Al ₂ O ₃	8.3	Co	19.2
Cr ₂ O ₃	0.473	V	108
FeO	20.2	Sc	81
MnO	0.239	La	5.5
MgO	8.1	Ce	(40)
CaO	10.0	Nd	
Na ₂ O	0.40	Sm	8.2
K ₂ O	0.061	Eu	1.95
P ₂ O ₅		Gd	
S		Tb	2.2
Nb (ppm)		Dy	14
Zr		Er	
Hf	9.0	Yb	8.0
Ta	0.92	Lu	1.23
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.

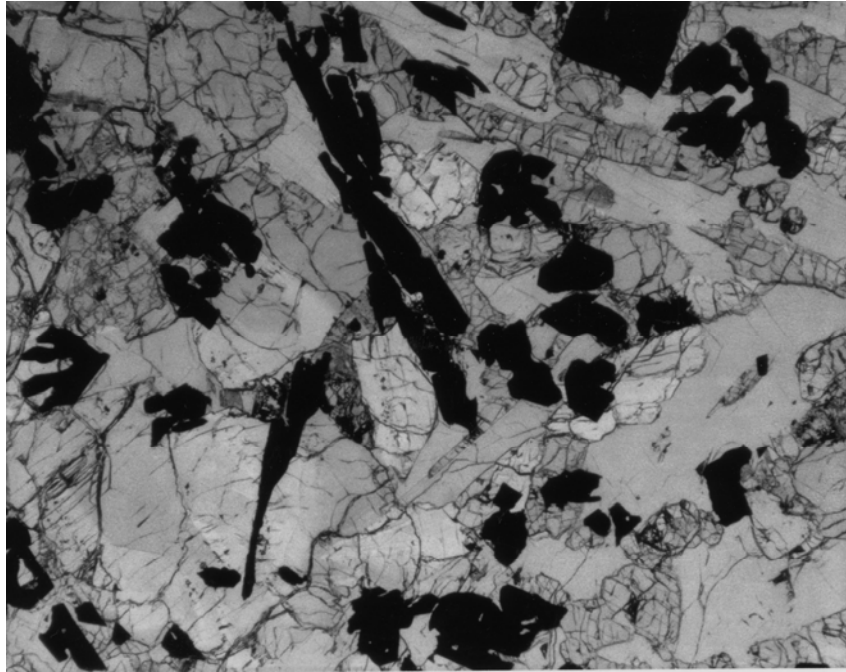


Figure 2: Photomicrograph of 71549, 5. An ophitic texture predominates and interstitial SiO_2 is present. Field of view = 2.5 mm.

suggested this was spurious. As such, we have not included Ce in the REE profile of Figure 3. The H REE exhibit a slight decrease from the MREE, but are all more abundant (relative to chondrites) than the LREE (Fig. 3) A negative Eu anomaly is present $[(\text{Eu}/\text{Eu}^*) N = 0.65]$.

PROCESSING

Of the original 7.908 of 71549,0, a total of 5.238 remains. 71549,1 weighs 1.16g. 71549,2 was used for INAA, and thin section ,5 was taken from this irradiated sample.

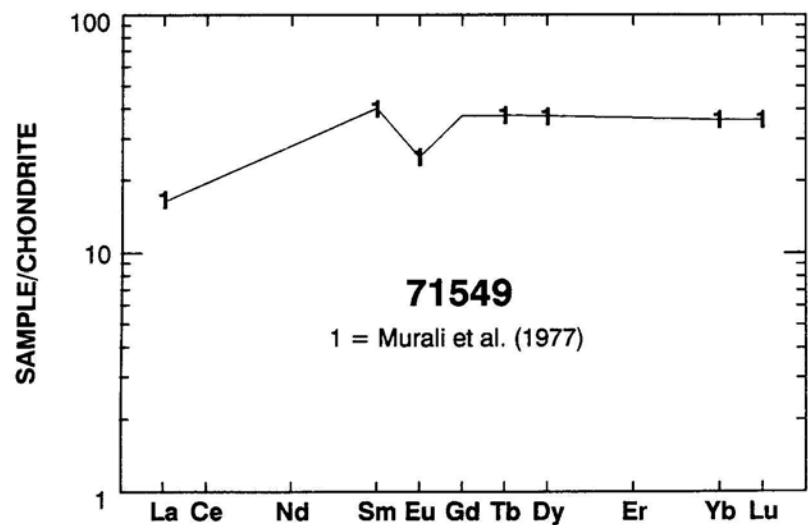


Figure 3: Chondrite -normalized rare-earth element plot of 71549. Data from Murali et al. (1977).