

15664 MEDIUM-GRAINED OLIVINE-NORMATIVE ST. 9A 7.40 g
MARE BASALT

INTRODUCTION: 15664 is a medium-grained, olivine-bearing mare basalt which is vuggy and somewhat vesicular (Fig. 1). Pyroxene and small olivines are visible macroscopically. In chemistry, the sample is a magnesian Apollo 15 olivine-normative mare basalt. 15664 was collected as part of the rake sample from Station 9A.

PETROLOGY: 15664 is a medium-grained, olivine-bearing mare basalt (Fig. 2). Pyroxene, the dominant phase, occurs in grains up to 2 mm long, and some are twinned. Plagioclases are lathy to irregular poikilitic, most less than 1 mm long, and nearly all the olivines are less than 1 mm anhedral crystals. Several contain crystallized silicate melt inclusions.



Figure 1. Pre-chip view of 15664. S-71-49542



Fig. 2a



Fig. 2b

Figure 2. Photomicrographs of 15664,4.
Widths about 2 mm. a) transmitted light; b) crossed polarizers.

CHEMISTRY: Ma et al. (1978) reported a bulk rock chemical analysis (Table 1, Fig. 3). The analysis is of an Apollo 15 olivine-normative mare basalt. The high MgO (imprecisely determined), low Ti, and slightly low rare earths suggest that the sample is a less-evolved member than most.

PHYSICAL PROPERTIES: 15664 was erroneously listed (instead of 15634) in a table of natural remanent magnetic intensity by Pearce et al. (1973). No magnetic data exist for 15664.

PROCESSING AND SUBDIVISIONS: The "N-T" end was chipped off to give several small chips (,1) and a single chip (,2). The latter was mainly consumed in producing thin sections ,4 and ,6. In 1976, ,1 was re-chipped to give ,10, used for chemistry and to produce thin section ,13. ,0 is now 5.97 g.

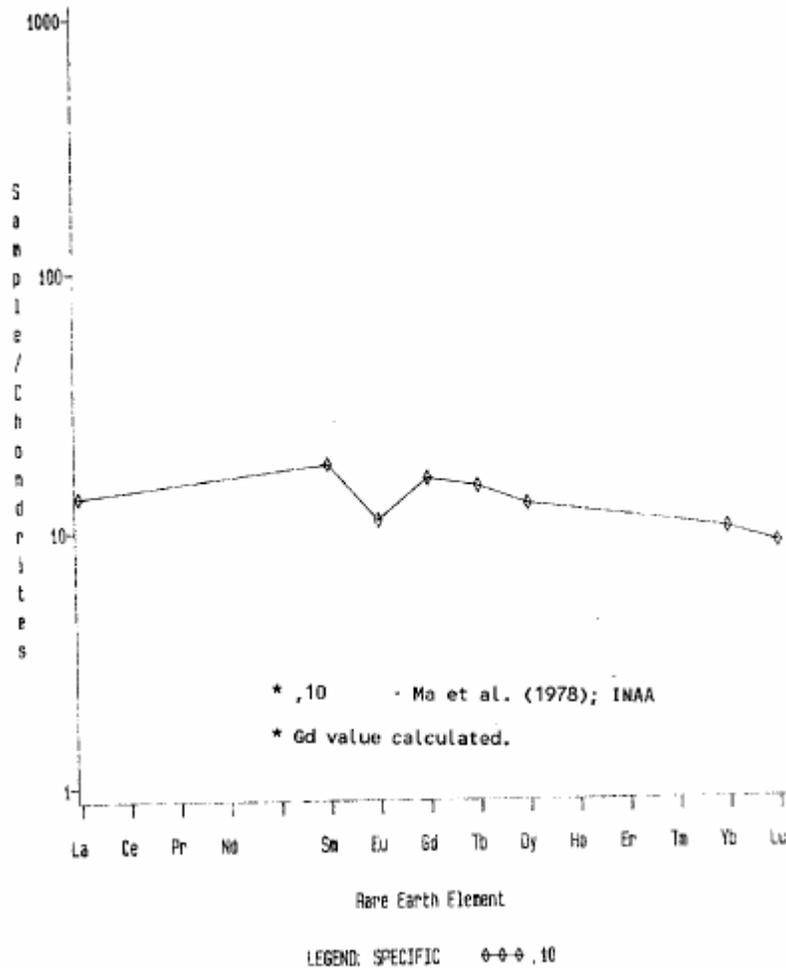


Figure 3. Rare earths in 15664.

TABLE 15664-1. Bulk rock chemical analysis

		.10
wt %	SiO ₂	
	TiO ₂	2.1
	Al ₂ O ₃	8.5
	FeO	22.6
	MgO	13
	CaO	9.2
	Na ₂ O	0.238
	K ₂ O	0.040
(ppm)	P ₂ O ₅	
	Sc	38
	V	204
	Cr	4340
	Mn	2140
	Co	54
	Ni	55(a)
	Rb	
	Sr	
	Y	
	Zr	
	Nb	
	Hf	2.5
	Ba	
	Th	
	U	
	Pb	
	La	4.5
	Ce	
	Pr	
	Nd	
	Sm	3.3
	Eu	0.76
	Gd	
	Tb	0.7
	Dy	4.0
	Ho	
	Er	
Tm		
Yb	2.0	
Lu	0.30	
Li		
Be		
B		
C		
N		
S		
F		
Cl		
Br		
Cu		
Zn		
(ppb)	I	
	At	
	Ge	
	Se	
	As	
	Sr	
	Nb	
	Tc	
	Ru	
	Rh	
	Pd	
	Ag	
	Cd	
	In	
	Sn	
	Sb	
	Te	
	Cs	
	Ta	400
	W	
	Re	
	Os	
Ir		
Pt		
Au		
Hg		
Tl		
Pb		

References and methods:

(1) Ma et al. (1978); MGA

Notes:

(a) ± 25 ppm

(1)