

15662 MEDIUM-GRAINED OLIVINE-NORMATIVE ST. 9A 4.90 g
MARE BASALT

INTRODUCTION: 15662 is a medium-grained, olivine-bearing mare basalt which is vuggy and vesicular (Fig. 1). Pyroxenes are conspicuous macroscopically but olivine is not. In chemistry, the sample is a fairly average member of the Apollo 15 olivine-normative mare basalt group. 15662 was collected as part of the rake sample from Station 9A.

PETROLOGY: 15662 is an olivine microgabbro (Fig. 2; Ma et al., 1978), consisting dominantly of pyroxene (pigeonite cores, augite rims), plagioclase, and a few per cent olivines. Its texture is similar to many other medium-grained Apollo 15 olivine-normative mare basalts.

CHEMISTRY: Ma et al. (1978) reported a bulk rock chemical analysis (Table 1, Fig. 3). The sample is a fairly average member of the Apollo 15 olivine-normative mare basalt group.



Figure 1. Pre-chip view of 15662. S-71-49733

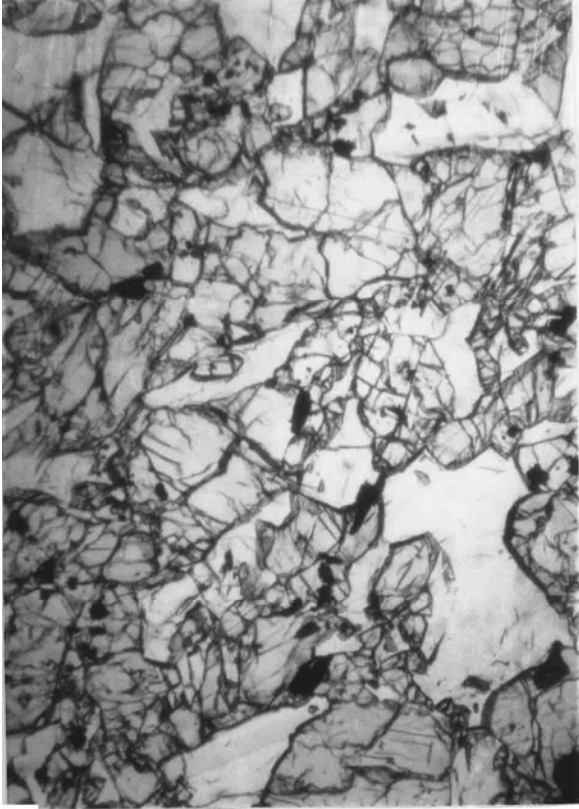


Fig. 2a



Fig. 2b

Figure 2. Photomicrographs of 15662,7.
Widths about 3 mm. a) transmitted light; b) crossed polarizers.

TABLE 15662-1. Bulk rock chemical analysis

		.4
WT %	SiO ₂	
	TiO ₂	2.3
	Al ₂ O ₃	9.5
	FeO	22.5
	MgO	10
	CaO	9.4
	Na ₂ O	0.271
	K ₂ O	0.040
	P ₂ O ₅	
	(ppm)	Sc
V		237
Cr		4430
Mn		2115
Co		52
Ni		75(a)
Rb		
Sr		
Y		
Zr		
Nb		
Hf		2.5
Ba		65(b)
Th		
U		
Pb		
La		5.0
Ce		
Pr		
Nd		
Sm		3.4
Eu		0.82
Gd		
Tb		0.7
Dy		3.8
Ho		
Er		
Tm		
Yb		2.1
Lu		0.27
Li		
Be		
B		
C		
N		
S		
F		
Cl		
Br		
Cu		
Zn		
(ppb)	I	
	At	
	Ga	
	Ge	
	As	
	Se	
	Mo	
	Tc	
	Ru	
	Rh	
	Pd	
	Ag	
	Cd	
	In	
	Sn	
	Sb	
	Te	
	Cs	
	Ta	600
	W	
	Re	
	Os	
Ir		
Pt		
Au		
Hg		
Tl		
Bi		
		(1)

References and methods:

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

Notes:

(a) ± 30 ppm
 (b) ± 35 ppm

PHYSICAL PROPERTIES: Hargraves and Dorety (1972) reported measurements of natural magnetic intensity (NRM) and saturated IRM ($H = 8$ kiloauss) and their variation with AF-demagnetization (Fig. 4), for a small chip. The intensities are higher than for 15555, a coarser-grained rock of the same basalt chemical group.

PROCESSING AND SUBDIVISIONS: Chipping produced a single piece (,2) and two pieces (,1). ,2 was used for the magnetic study and mainly returned. ,1 was further chipped in 1976 to produce ,4 which was used for chemical studies and to produce the thin section ,7. ,0 is now 3.29 g.

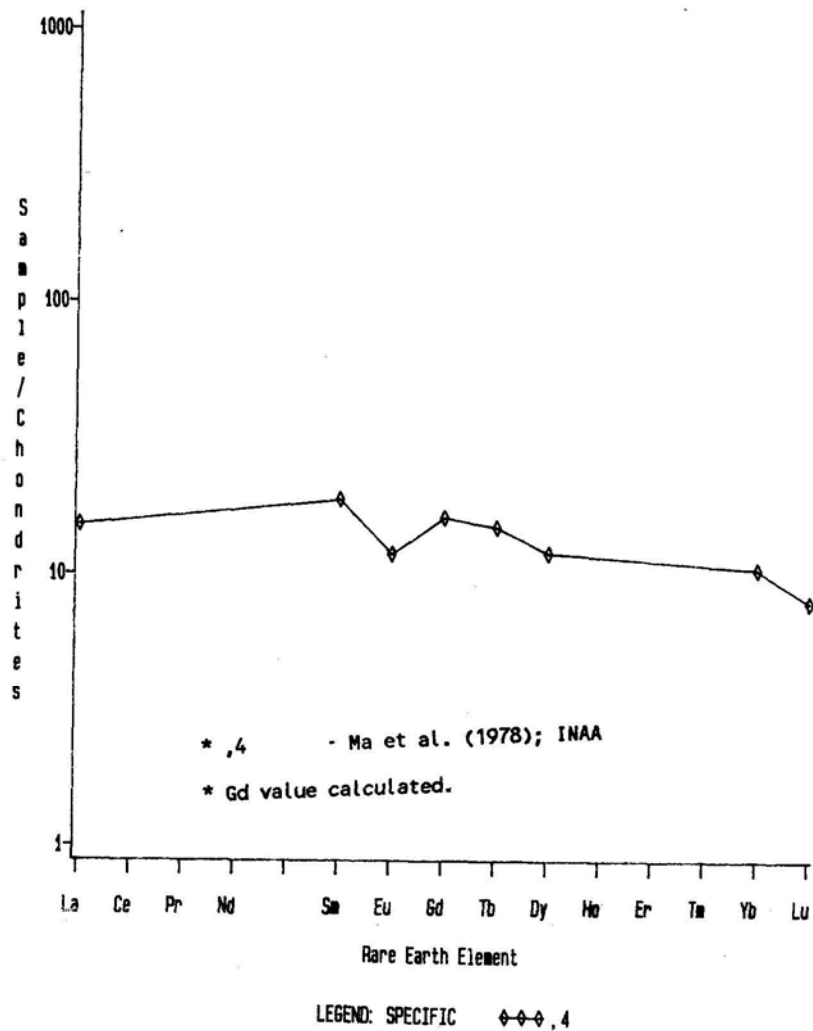


Figure 3. Rare earths in 15662.

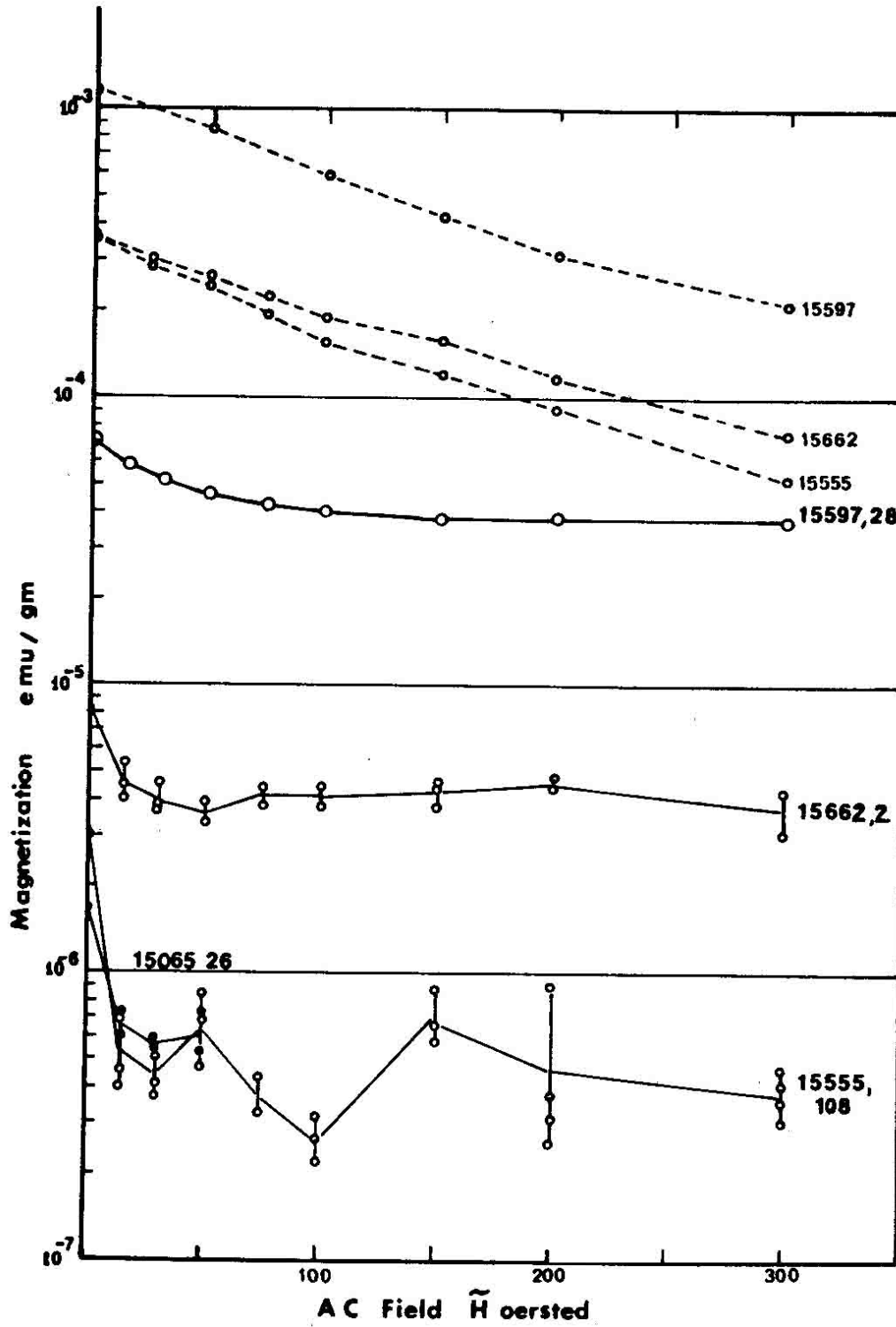


Figure 4. Demagnetization results of 15662 and two other mare basalts (15555, coarse olivine-normative; 15597, pyroxene vitrophyre).

NRM = solid line curve. Saturated IRM = broken line.

(Hargraves and Dorety, 1972).