15630 MEDIUM-GRAINED OLIVINE-NORMATIVE MARE BASALT ST. 9A 23.2 g

INTRODUCTION: 15630 is a medium-grained, olivine-bearing mare basalt which is very vesicular (Fig. 1). The olivines do not form conspicuous phenocrysts. In chemistry, it is an average olivine-normative mare basalt. It is tough, angular, and lacks zap pits. 15630 was collected as part of the rake sample at Station 9A.

PETROLOGY: 15630 is an olivine microgabbro similar to 15606, 15612, etc. (Fig. 2). The olivine is not conspicuously phenocrystic.

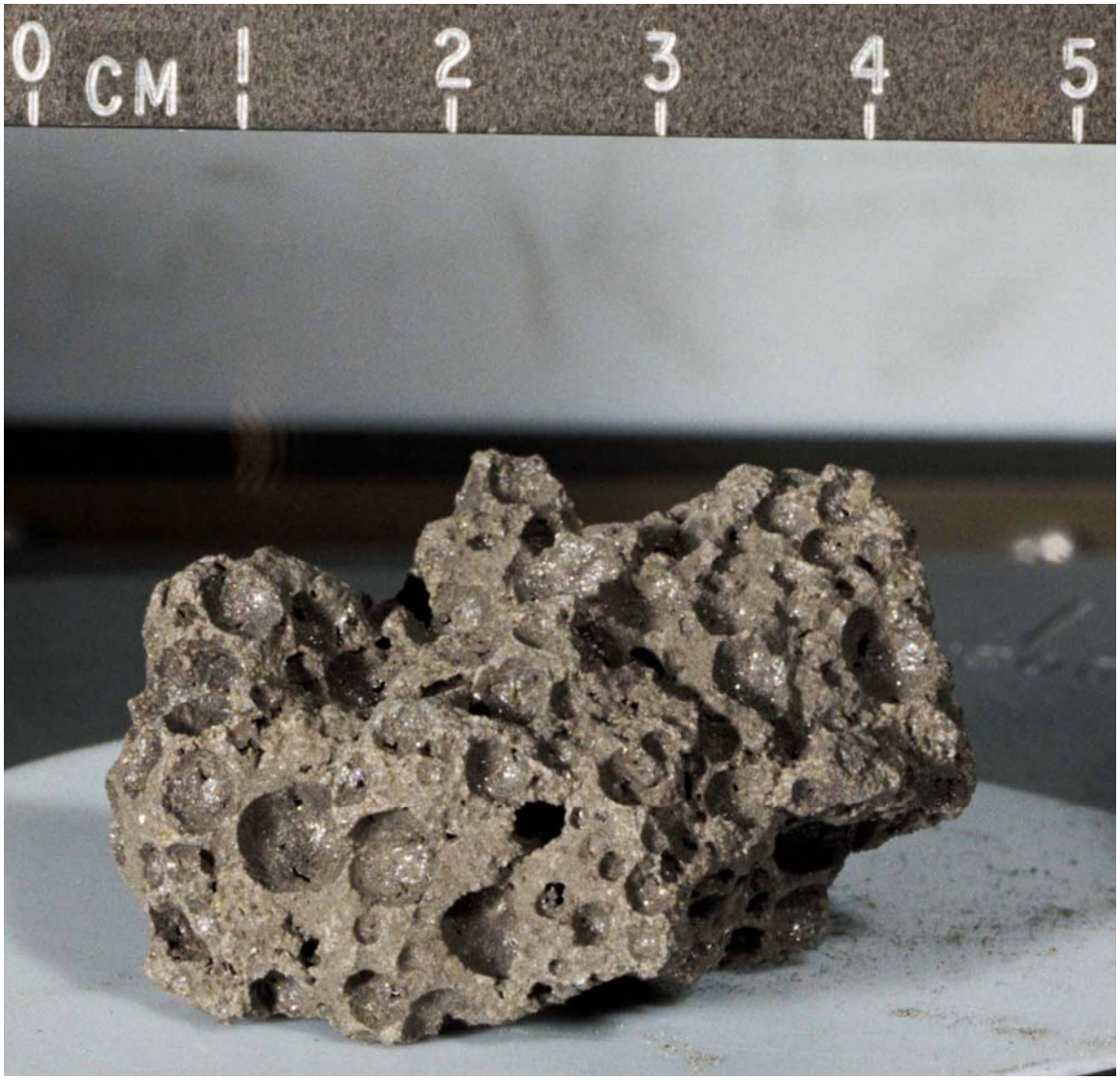

Figure 1. Macroscopic, pre-split view of 15630. S-71-49269

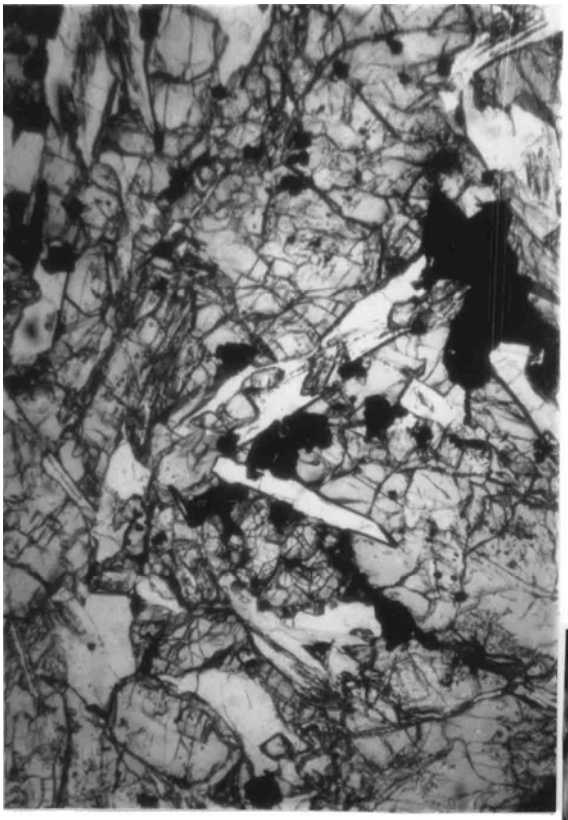

Fig. 2a

Fig. 2b

Figure 2. Photomicrographs of 15630,4.
Widths about 3 mm. a) transmitted light; b) crossed polarizers.

CHEMISTRY: A bulk rock chemical analysis is listed in Table 1 and the rare earths shown in Figure 3. Apart from the low TiO_2, the sample is a fairly average Apollo 15 olivine-normative mare basalt.

TABLE 15630-1. Bulk rock chemical analysis

		,1
Wt %	SiO2	
	TiO2	2.0
	Al2O3	8.9
	FeO	20.8
	MgO	11
	CaO	8.8
	Na2O	0.252
	K2O	0.044
	P2O5	
(ppm)	Sc	39
	V	225
	Cr	5355
	Mn	2080
	Co	53
	Ni	70(a)
	Rb	
	Sr	
	Y	
	Zr	
	Nb	
	Hf	2.4
	Ba	80(b)
	Th	
	U	
	Pb	
	La	5.4
	Ce	
	Pr	
	Nd	
	Sm	3.5
	Eu	0.79
	Gd	
	Tb	0.7
	Dy	4.3
	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	470
	W	
	Re	
	Os	
	Ir	
	Pt	
	Au	
	Hg	
	Tl	
	Bi	
		(1)

References and methods:

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

Notes:

(a) ±30 ppm
(b) ±55 ppm

PHYSICAL PROPERTIES: Gose et al. (1972) and Pearce et al. (1973) reported a natural magnetic intensity (NRM) of 3.3 x 10^{-6} emu/g for the bulk sample. This value is typical for Apollo 15 mare basalts.

PROCESSING AND SUBDIVISIONS: In 1977, chipping produced two chips, one of which remains with ,0. The other (,1) was used for chemical analysis and also produced the thin section ,4. ,0 is now 22.46 g.

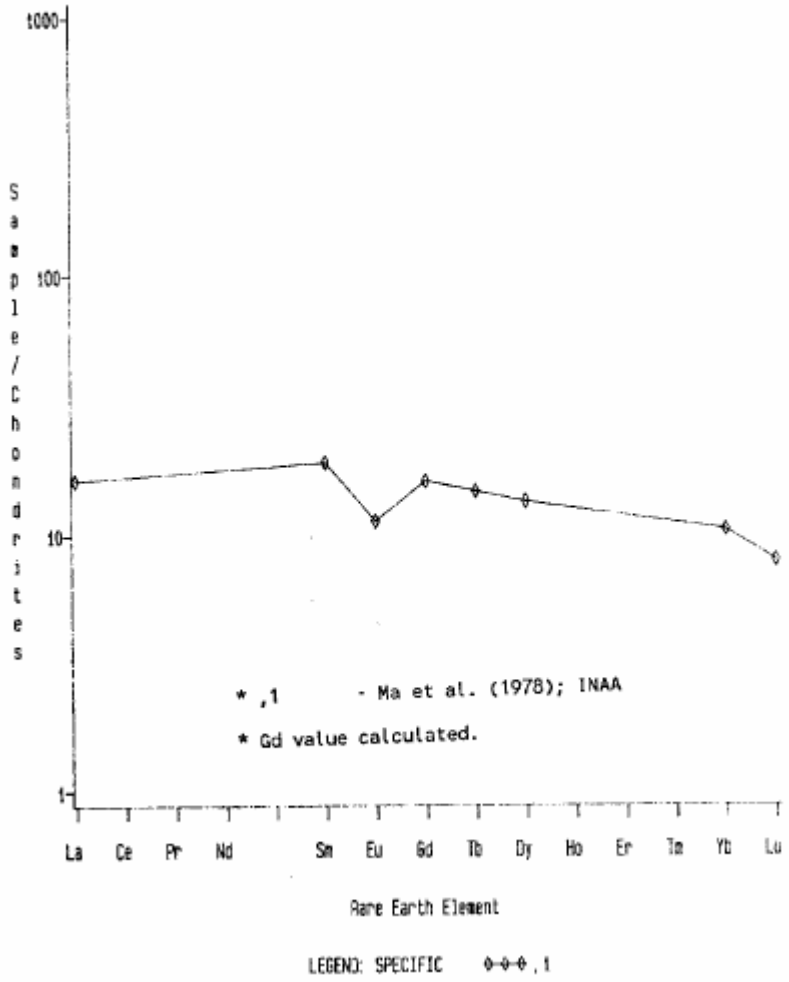

Figure 3. Rare earths in 15630