15673 MEDIUM-GRAINED OLIVINE-NORMATIVE MARE BASALT ST. 9A 5.90 g

INTRODUCTION: 15673 is a medium- to fine-grained, olivine-bearing mare basalt which is vesicular (Fig. 1). Olivines do not form phenocrysts. In chemistry, the sample is a primitive member of the Apollo 15 olivine-normative mare basalt suite. No zap pits are present on the sample but a few (welded?) dust patches are present. 15673 was collected as part of the rake sample from Station 9A.

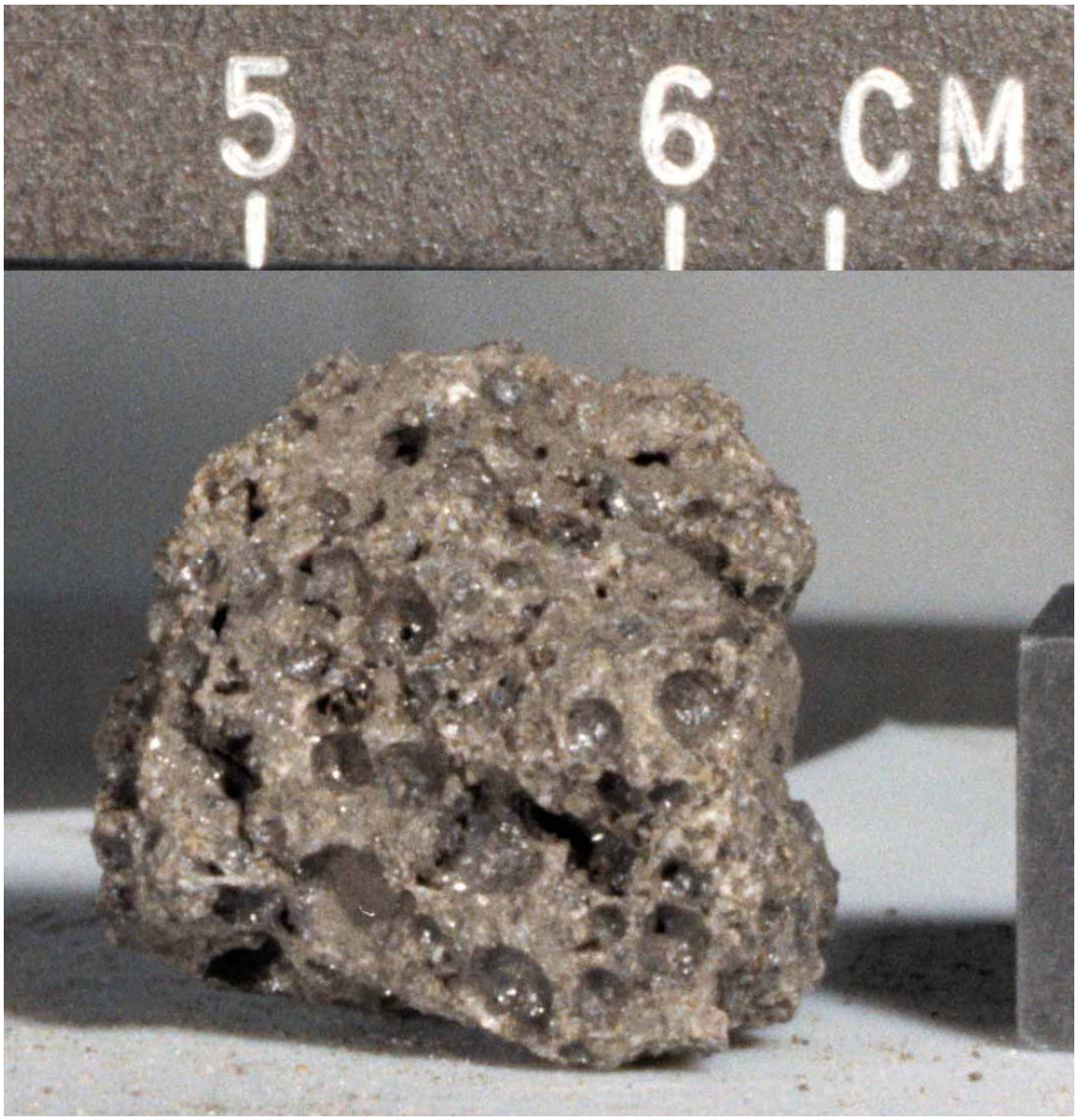

Figure 1. Pre-chip view of 15673. S-71-49845

PETROLOGY: 15673 is a vesicular, olivine-bearing mare basalt of medium grain size (Fig. 2). The texture is gabbroic or subophitic and very few crystals are larger than 1 mm across. The dominant phase is pyroxene, which is zoned.

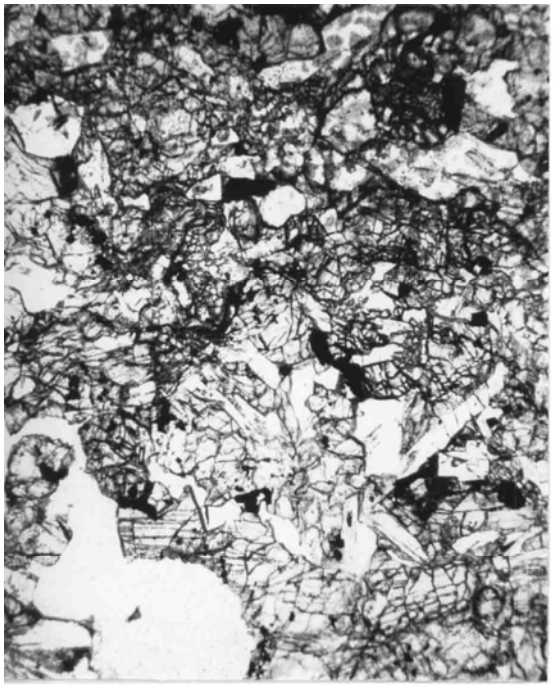

Fig. 2a

Fig. 2b

Figure 2. Photomicrographs of 15673,6. Widths about 3 mm.
a) transmitted light; b) crossed polarizers.

CHEMISTRY: A bulk analysis by Ma et al. (1978) (Table 1, Fig. 3) has low rare earths and TiO_2, and high (though imprecisely determined) MgO, indicating that 15673 is a primitive member of the Apollo 15 olivine-normative mare basalt group.

PROCESSING AND SUBDIVISIONS: Chipping produced ,1 (several chips) and ,2 (single chip). The latter was used to make thin sections ,3 and ,6. In 1976, ,4 was taken from ,1 and used for chemical analysis and to make thin section ,12. ,0 is now 4.64 g.

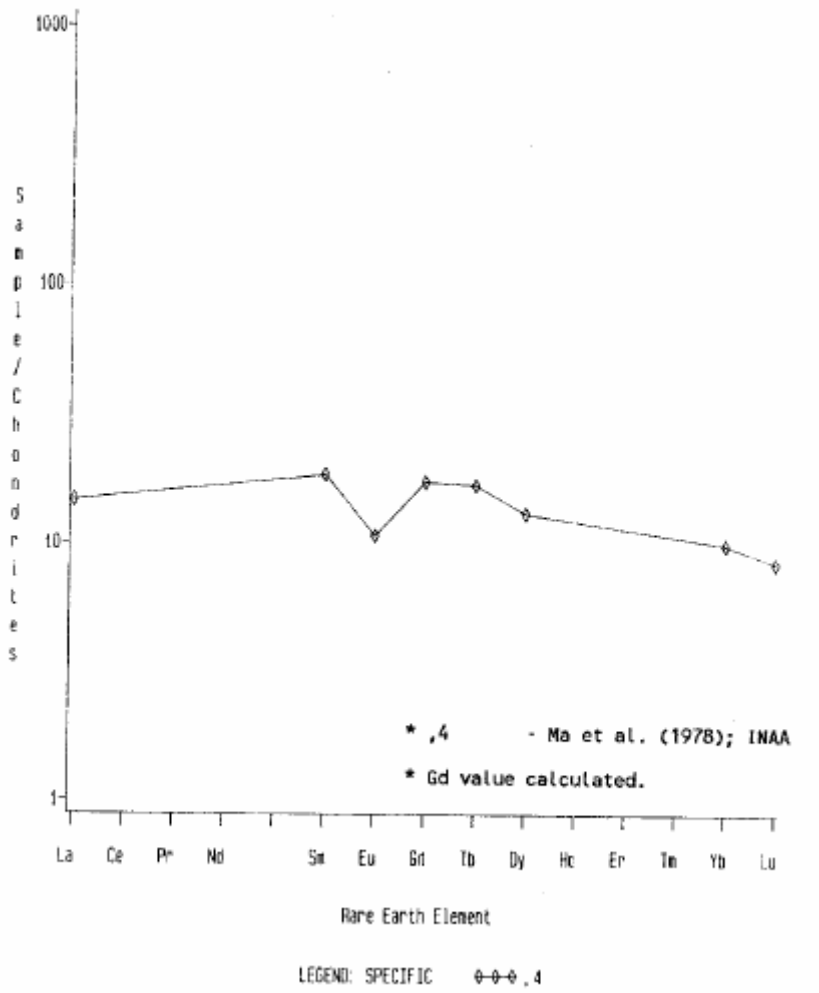

Figure 3. Rare earths in 15673.

TABLE 15673-1. Bulk rock chemical analysis

		,4
Wt %	SiO2	
	TiO2	1.9
	Al2O3	8.7
	FeO	20.7
	MgO	12
	CaO	8.8
	Na2O	0.254
	K2O	0.046
	P2O5	
(ppm)	Sc	37
	V	200
	Cr	4220
	Mn	1990
	Co	47
	Ni	15(a)
	Rb	
	Sr	
	Y	
	Zr	
	Nb	
	Hf	2.5
	Ba	
	Th	
	U	
	Pb	
	La	4.9
	Ce	
	Pr	
	Nd	
	Sm	3.4
	Eu	0.75
	Gd	
	Tb	0.8
	Dy	4.2
	Ho	
	Er	
	Tm	
	Yb	2.0
	Lu	0.29
	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	410
	W	
	Re	
	Os	
	Ir	
	Pt	
	Au	
	Hg	
	Tl	
	Bi	
		(1)

References and methods:

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

Notes:

(a) ± 15 ppm