

15115 PORPHYRITIC SUBOPHITIC QUARTZ-NORMATIVE ST. 2 4.0 g
MARE BASALT

INTRODUCTION: 15115 is a coarse quartz-normative mare basalt (Fig. 1) with conspicuous yellow-green pyroxene phenocrysts. It is tough and angular, with a few vugs and no zap pits. It was collected as part of the rake sample 5 m east of the boulder at Station 2 (see Figure 15105-2).



Figure 1. Post-split view of 15115,0. S-77-22585

PETROLOGY: 15115 is coarse-grained with a gabbroic texture similar to 15116 and 15117, although the thin sections lack the coarse phenocrysts typical of the quartz-normative mare basalts (Fig. 2). Macroscopically such phenocrysts appear to be present (Fig. 1). Plagioclases are more-or-less equant and commonly enclose single small pyroxene crystals (Ma et al., 1978). Trace amounts of olivine are present.



Figure 2. Photomicrograph of 15115,3.
Cross polarizers. Width about 1.25 mm.

CHEMISTRY: The analysis of Ma et al. (1978) is listed in Table 1; rare earths are shown in Figure 3. The low MgO, FeO, and TiO₂ and the high rare-earth abundances suggest that this basalt is a member of the quartz-normative group.

PHYSICAL PROPERTIES: Gose et al. (1972) and Pearce et al. (1973) using a Deveko cryogenic magnetometer, found a natural remanent magnetism intensity of 7.2×10^{-6} emu/g for the sample, typical of Apollo 15 mare basalts.

PROCESSING AND SUBDIVISIONS: 15115 was chipped to produce ,1 from which the thin section ,3 and the chemical analysis was made.

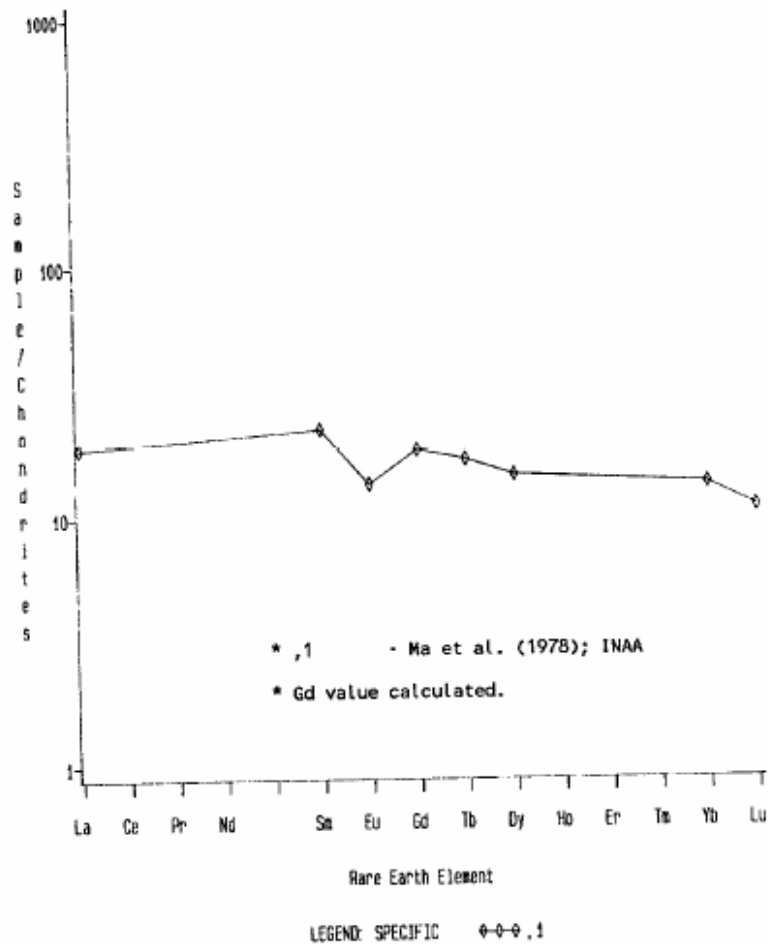


Figure 3. Rare earths in 15115,1.

TABLE 15115-1. Chemical analysis

		.1
Wt %	SiO ₂	
	TiO ₂	1.8
	Al ₂ O ₃	9.6
	FeO	20.0
	MgO	.8
	CaO	10.0
	Na ₂ O	0.306
	K ₂ O	0.055
	P ₂ O ₅	
(ppm)	Sc	45
	V	187
	Cr	3055
	Mn	2130
	Co	41
	Ni	10(a)
	Rb	
	Sr	
	Y	
	Zr	
	Nb	
	Hf	2.6
	Ba	70(b)
	Th	
	U	
	Pb	
	La	6.3
	Ce	
	Pr	
	Nd	
	Sm	4.1
	Eu	0.94
	Gd	
	Tb	0.8
	Dy	4.7
	Ho	
	Er	
Tm		
Yb	2.7	
Lu	0.37	
Li		
Be		
B		
C		
N		
S		
F		
Cl		
Br		
Cu		
Zn		
(ppb)	I	
	Ac	
	Ga	
	Ge	
	As	
	Se	
	Mo	
	Tc	
	Ru	
	Rh	
	Pd	
	Ag	
	Cd	
	In	
	Sn	
	Sb	
	Te	
	Cs	
	Ta	4300
	W	
	Re	
Os		
Ir		
Pt		
Au		
Hg		
Tl		
Pb		

(1)

References and methods:

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

Notes:

(a) + 10
(b) + 35