15257 REGOLITH BRECCIA, GLASS-COATED ST. 6 22.5 g

INTRODUCTION: 15257 is a coherent regolith breccia with a glass coat on one side (Fig. 1). It contains typical regolith breccia constituents, including glasses and mare basalt fragments. It is blocky, subangular to rounded, with a freshly-broken surface, and is a medium-dark gray. The glass is vesicular and grayish-black. Zap pits occur mainly on one side ("S"). The sample was not documented on collection nor identified in photographs and it is possibly a small piece broken from 15255. It was returned in the same sample bag as 15255 and 15256, which was filled 30 m west of the LRV and approximately 25 m southwest and upslope of the 12 m crater at Station 6.

Fig. 1a

Fig. 1b

Figure 1. Pre-split view of 15257. a) S-71-45818; b) S-71-45814.

PETROLOGY: 15257 is a non-porous regolith breccia with coarse clasts, rather like 15255 (Fig. 2). It contains abundant glass, including colorless, green, and yellow, though red glass is rare to absent. Lithic fragments include fine- and medium-grained basalts, many of which look like mare fragments. According to McKay et al. (1984) the I_s/FeO is 20 to 30, and Korotev (1984, unpublished) refined this to 23. Hence the sample is immature to submature.

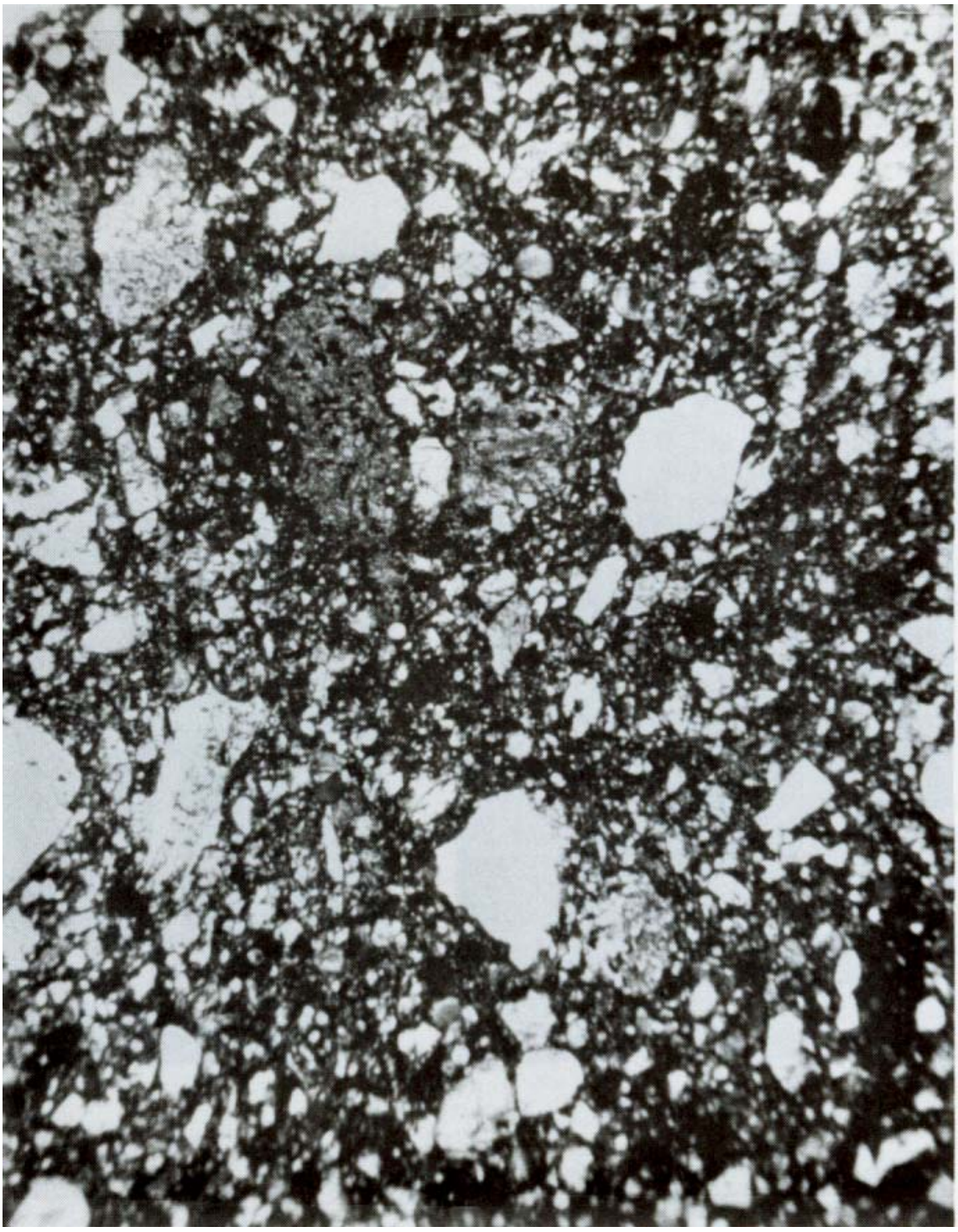

Figure 2. Photomicrograph of 15257,4.
Width about 2 mm. Transmitted light.

CHEMISTRY: Only one analysis has been made (Table 1, Fig. 3). The chemistry is more mafic than local soil. For those elements which be made, the data are very similar to those for 15255, consistent with suggestions that 15257 was broken from 15255 in transit.

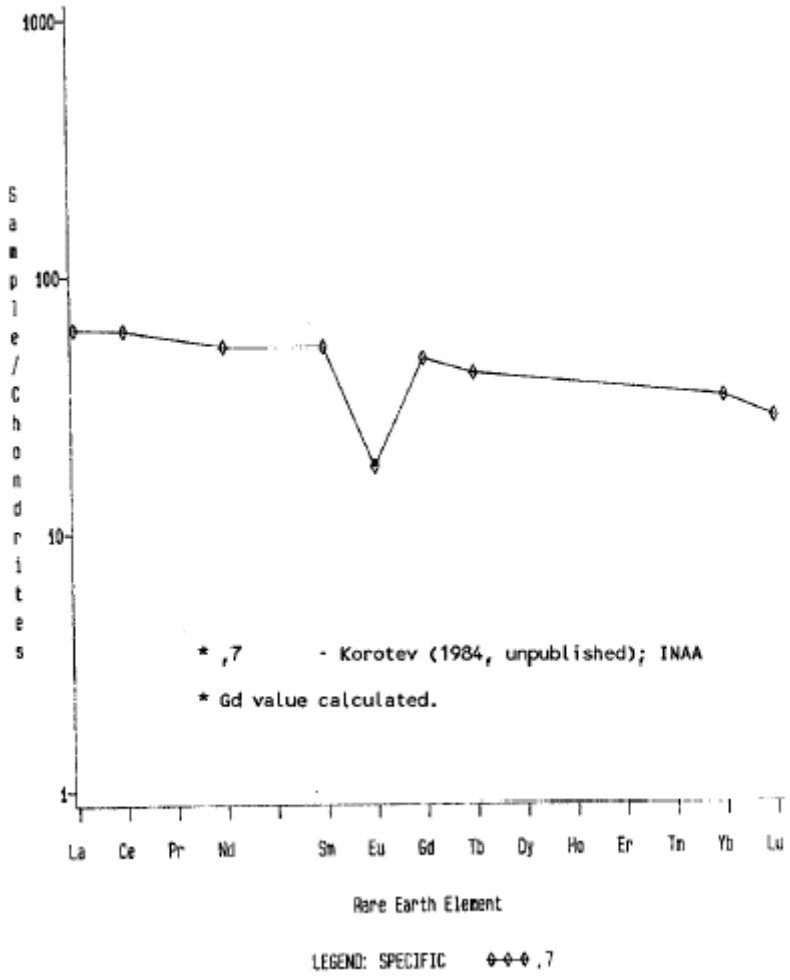

Figure 3. Rare earths in 15257,7.

TABLE 15257-1. Chemical analysis

		,7
Wt %	SiO2	
	TiO2	1.67
	Al2O3	13.2
	FeO	15.5
	MgO	10.8
	CaO	9.5
	Na2O	0.39
	K2O	
	P2O5	
(ppm)	Sc	29.9
	V	107
	Cr	2840
	Mn	1550
	Co	43.6
	Ni	164
	Rb	
	Sr	140
	Y	
	Zr	280
	Nb	
	Hf	7.8
	Ba	208
	Th	3.2
	U	0.8
	Pb	
	La	20.6
	Ce	54
	Pr	
	Nd	32
	Sm	9.6
	Eu	1.25
	Gd	
	Tb	1.96
	Dy	
	Ho	
	Er	
	Tm	
	Yb	6.7
	Lu	0.94
	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	240
	Ta	960
	W	
	Re	
	Os	
	Ir	4.7
	Pt	
	Au	1.6
	Hg	
	Tl	
	Bi	
		(1)

References and methods:

(1) Korotev (1984, unpublished); INAA

PROCESSING AND SUBDIVISIONS: Only a few small chips have been removed from ,0 (Fig. 4). Two thin sections (,4 and ,9) were made from a chip ,1 and do not include the glass coat. ,0 consists of one main piece and some small pieces and has a mass of 18.7 g. Some of the chips were numbered (,5 to ,8) in 1983.

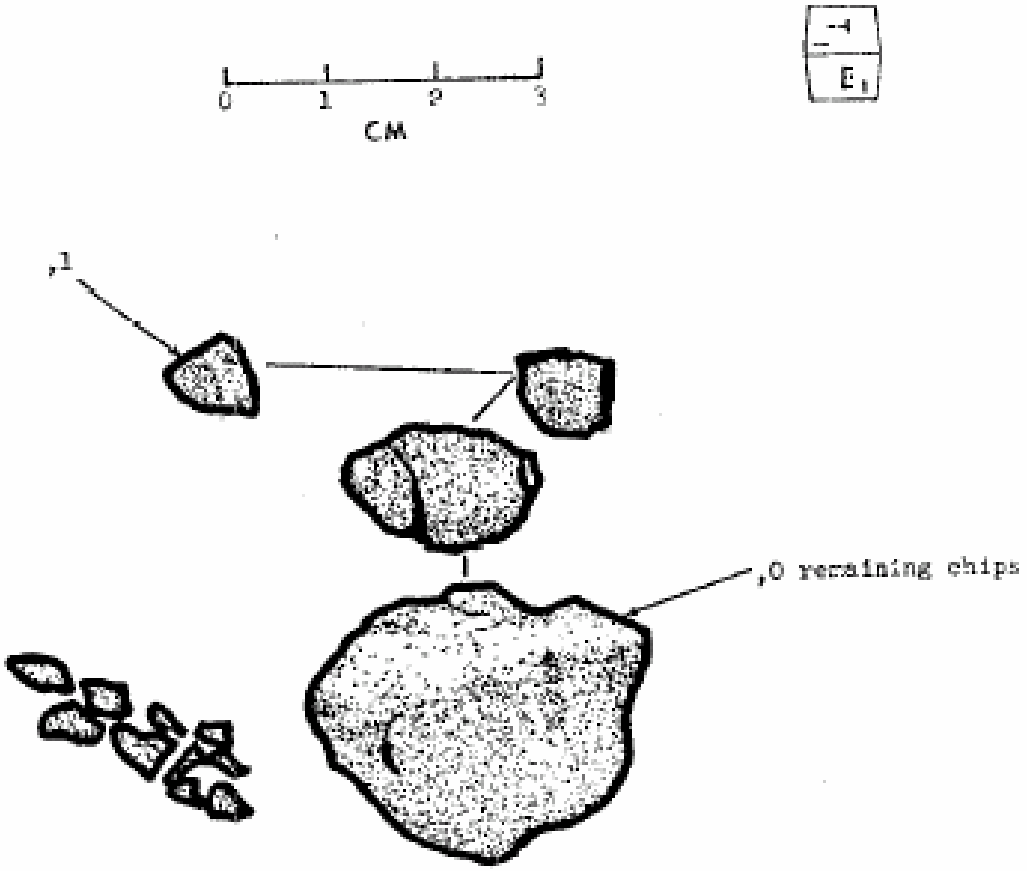

Figure 4. Original chipping of 15257 to produce ,1, which was used for two thin sections.