15295	REGOLITH BRECCIA	ST. 6	947.3 g

INTRODUCTION: 15295 is a glassy matrix regolith breccia with some conspicuous white clasts, at least one large one of which is a pristine ferroan anorthosite. It contains vesicular glass veins. Its composition is very similar to local regolith.

15295 was collected along with soil samples upslope (south) about 10 or 15 m from the LRV. It was distinctive because of its large size and angularity (Figs. 1, 2), and because it had a fillet on its uphill side. It is medium light gray, tough, and penetrated with glass. It has a few zap pits on some surfaces.

Figure 1. Macroscopic view of 15295 prior to its splitting, showing prominent white clast and bubbly glass. S-71-51645

Figure 2. Fresh breccia surface exposed on ,2. S-71-51696

PETROLOGY: 15295 has a glassy brown matrix containing lithic, mineral, and glass fragments (Fig. 3a). The lithic fragments include mare basalt and cataclastic anorthosites. One large white clast was described by Warren and Wasson as a cataclastic, ferroan anorthosite similar to Apollo 16 anorthosites. It contains plagioclases ($An_{95.1-95.8}$) and sparse, tiny pyroxenes ($En_{41}Wo_{42}$). The chemistry of the fragment indicates that it is pristine. This clast appears to be the centimeter-sized anorthosite in thin sections ,12, ,17, and ,19 (Fig. 3b). It might also be the white clast in Figure 1, but there is inadequate documentational evidence.

McKay and Wentworth (1983) found 15295 to have a compact intergranular porosity, a low fracture porosity, very rare agglutinates, minor spheres, and common shock features. An I_s/FeO of 36 (McKay et al., 1984) or 38 (Korotev, 1984 unpublished) was determined, i.e., the sample is submature.

Glass veins penetrate the rock and are flow-banded and greenish brown. Wilshire and Moore (1974) interpret the glass on the surface of the rock to be exposed veins which had developed along conjugate fracture surfaces in the original rock mass.

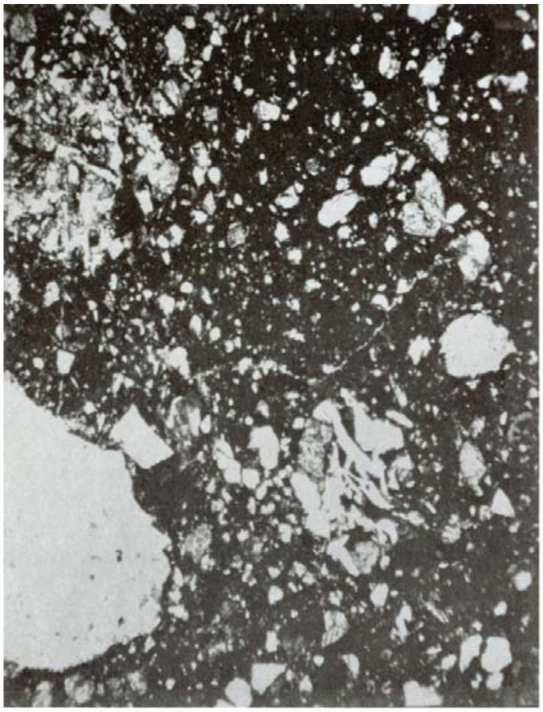

Fig. 3b

Figure 3. Photomicrographs of 15295,17
(a) breccia matrix, transmitted light;
(b) cataclastic anorthosite clast, crossed polarizers.

CHEMISTRY: Analysis for major and trace elements for the matrix agree well for most elements (Table 1, Fig. 4). Its chemical composition is very similar to the Station 6 soils, hence it was probably locally-produced.

Warren and Wasson (1978) presented an analysis of the ferroan anorthosite clast, whose trace abundances indicate it to be free of meteoritic or KREEP contamination (Table 2). It has very low rare earth abundances with the positive europium anomaly typical for anorthosites.

PROCESSING AND SUBDIVISIONS: The sample was broken into several large and small pieces. The bulk of the sample is in ,1 (387.3 g), which is in remote storage, and ,0 (430.7 g). Thin sections ,12, ,17, and ,19 were made from ,4 (10.68 g). The white clast was separated from ,5 as ,22 and appears to be the same white clast as in ,4. Thin sections ,24 and ,28 made from this white clast in ,5 are mainly dark breccia matrix with small pieces of the anorthosite. The large white clast in Figure 1 might be the same clast; it now is part of ,0.

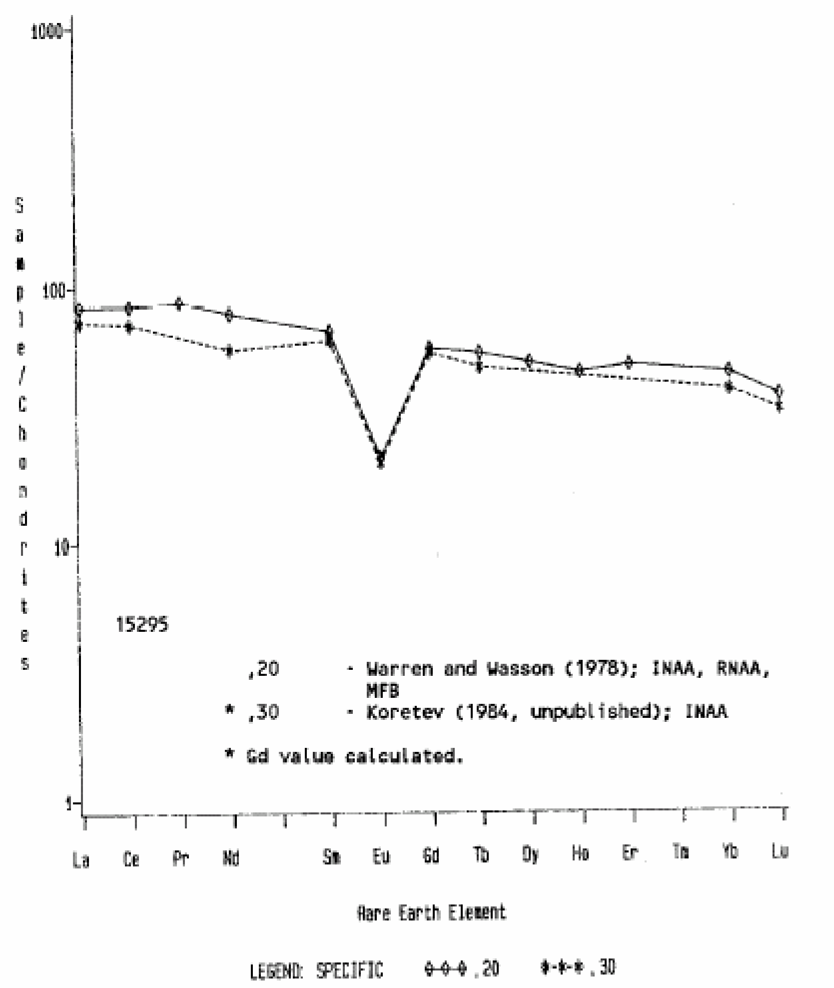

Figure 4. Rare earths in matrix.

TABLE 15295-1.

		,20 MATRIX	,22 ANORTHOSITE CLAST
Wt %	SiO2	46.68	43.9
	TiO2	1.48	
	Al2O3	16.29	35.5
	FeO	11.87	0.23
	MgO	10.24	0.18
	CaO	11.33	19.5
	Na2O	0.4979	0.402
	K2O	0.2247	
	P2O5	0.2222	
(ppm)	Sc	24.7	0.38
	V	76.9	
	Cr	2440	17.8
	Mn	1275	38
	Co	39.4	1.4
	Ni	250	<15
	Rb	5.70	
	Sr	135,147	
	Y	101	
	Zr	394	
	Nb	28	
	Hf	9.65	
	Ba	279	
	Th	3.89	
	U	1.04	
	Pb		
	La	27.7	0.19
	Ce	74.3	
	Pr	9.83	
	Nd	47	
	Sm	12.1	0.049
	Eu	1.47	0.78
	Gd	14.2	
	Tb	2.58	
	Dy	15.9	
	Ho	3.2	
	Er	9.75	
	Tm		
	Yb	9.07	
	Lu	1.26	
	Li	14.3	
	Be	5.47	
	B		
	C		
	N		
	S	610	
	F	59	
	Cl	20.4	
	Br	0.073	
	Cu	4.72	
	Zn	18.0	25.2
(ppb)	I		
	At		
	Ga	4170	3970
	Ge	500	8.2
	As	23	
	Se	150	
	Mo		
	Tc		
	Ru		
	Rh		
	Pd		
	Ag		
	Cd		118
	In		<0.6
	Sn		
	Sb		
	Te		
	Cs	270	
	Ta	1170	
	W	550	
	Re	0.71	
	Os		
	Ir		0.021
	Pt		
	Au	2.9	0.041
	Hg		
	Tl		
	Bi		
		(1)	(2)

References and methods:

(1) Wanke et al. (1977); XRF, RNAA, etc.
(2) Warren and Wasson (1978); INAA, RNAA, MFB