

15324

REGOLITH BRECCIA

ST. 7

32.3 g

INTRODUCTION: 15324 is a regolith breccia, less porous than most others at Spur Crater but more porous than 15323. It contains glass, mineral, and lithic debris in a glassy matrix. Green glass spheres are prominent macroscopically. It is low in incompatible elements compared to many other A15 regolith breccias. It has a lumpy, irregular surface but zap pits are apparently absent. It was collected as part of the rake sample from the north-east rim of Spur Crater.

PETROLOGY: 15324 is a brown, glassy regolith breccia (Fig. 2). It contains abundant glass and glassy debris, including spheres, of colorless, green, yellow, and some orange glass. Mineral fragments include cataclastic and shocked plagioclases, exsolved pyroxene, and a large twinned pyroxene. Lithic fragments are sparse and include glassy and feldspathic breccias. The matrix is not as porous as many other breccias, but is more porous than 15323.

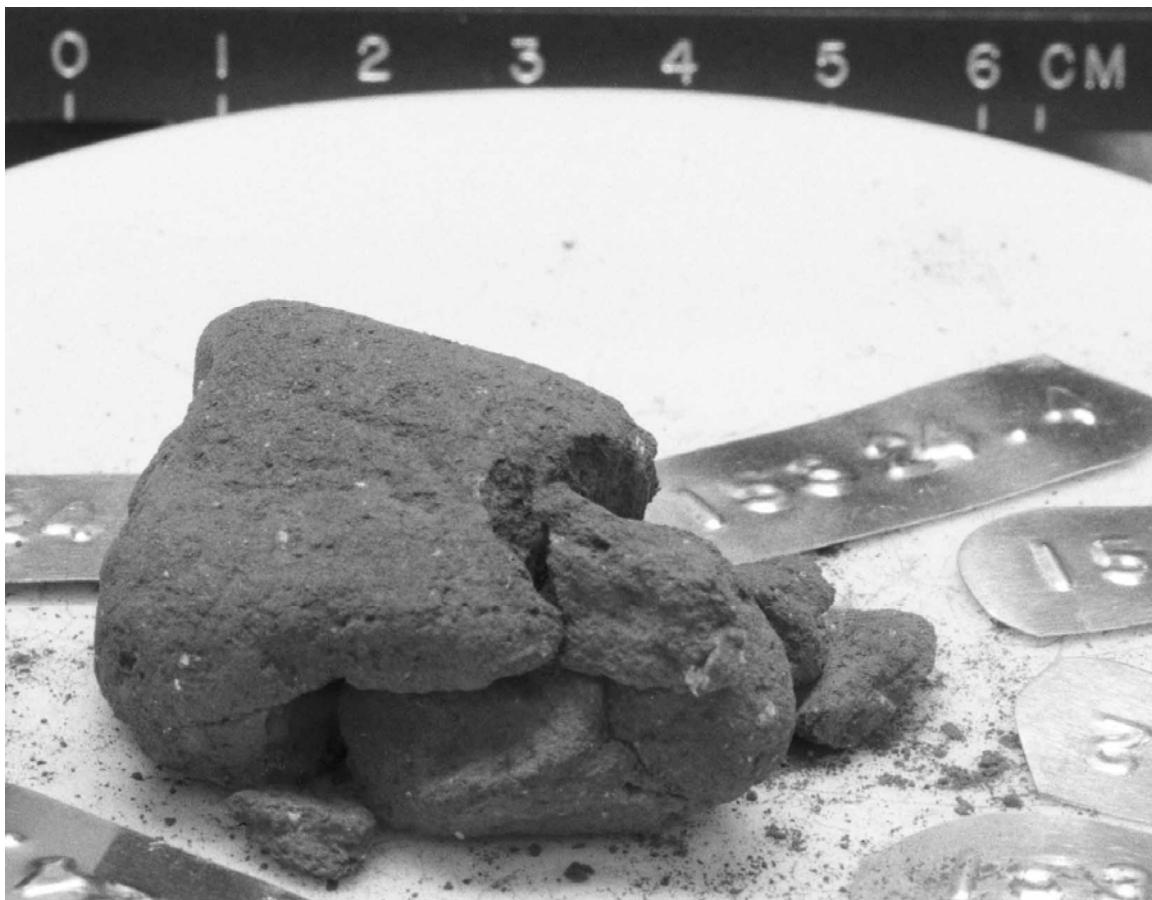


Figure 1. Post split view of 15324. S-71-59559

CHEMISTRY: An analysis for bulk rock minor and trace elements was reported by S.R. Taylor et al. (1973) (Table 1, Fig. 3). The incompatible elements are very low for a regolith breccia, but not as low as 15319. S.R. Taylor et al. (1973) modeled the analysis as a mixture of 37.8% highlands basalt and 62.2% low-K Fra Mauro, but this modeling has little physical significance. The component percentages are probably reversed (i.e., should be 62.2% highlands basalt), given the low incompatible element abundances, consistent with the diagrams of S.R. Taylor (1973) and S.R. Taylor et al. (1972) which indicate about 65% highland basalt component.

PROCESSING AND SUBDIVISIONS: 15324 was chipped and split (Figs. 1, 4). ,2 was partly used to make thin sections ,8; ,9; and ,10, while ,4 was used for the chemical analysis. All other pieces remain unused. ,0 is now 21.43 grams.

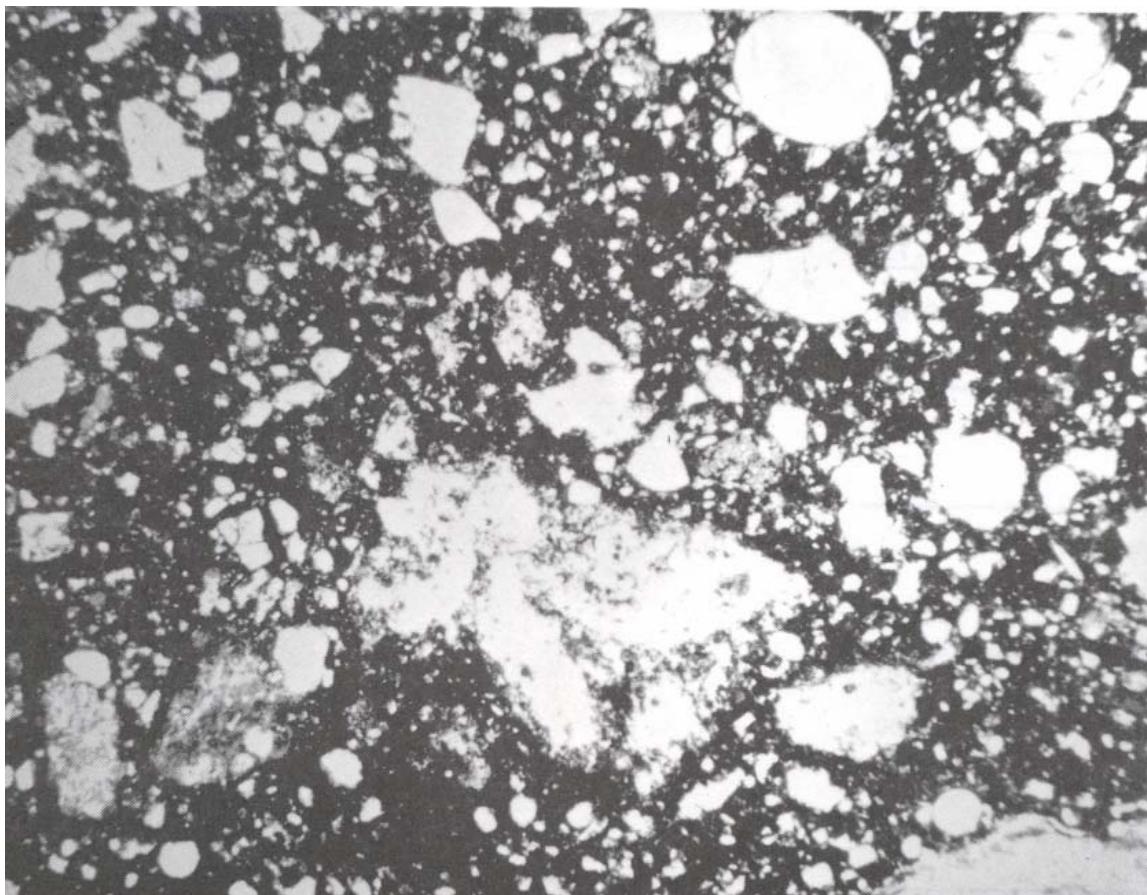


Figure 2. General matrix view of 15324,9.
Transmitted light. Width about 2 mm.

TABLE 15234-1. Bulk chemical analysis

Wt%		,4
	SiO ₂	
	TiO ₂	
	Al ₂ O ₃	
	FeO	
	MgO	
	CaO	
	Na ₂ O	
	K ₂ O	
	P ₂ O ₅	
(ppm)	Sc	36.0
	V	130.0
	Cr	2500
	Mn	
	Co	48.0
	Ni	248
	Rb	2.6
	Sr	
	Y	47.0
	Zr	200.0
	Nb	15.0
	Hf	3.5
	Ba	160
	Th	1.79
	U	0.43
	Pb	2.3
	La	13.6
	Ce	31.0
	Pr	4.4
	Nd	18.3
	Sm	5.7
	Eu	1.07
	Gd	7.2
	Tb	1.09
	Dy	6.8
	Ho	1.64
	Er	4.7
	Tm	0.73
	Yb	4.4
	Lu	0.68
	Li	
	Be	
	B	
	C	
	N	
	S	
	F	
	Cl	
	Br	
	Cu	11.0
	Zn	
(ppb)	I	
	At	
	Ga	5000
	Ge	
	As	
	Se	
	Mo	
	Tc	
	Ru	
	Rh	
	Pd	
	Ag	
	Cd	
	In	
	Sn	190
	Sb	
	Te	
	Cs	100
	Ta	
	W	130
	Re	
	Os	
	Ir	
	Pt	
	Au	
	Hg	
	Tl	
	Bi	

(1)

References and methods:

- (1) S.R. Taylor *et al.* (1973);
spark source mass spec.;
emission spec.

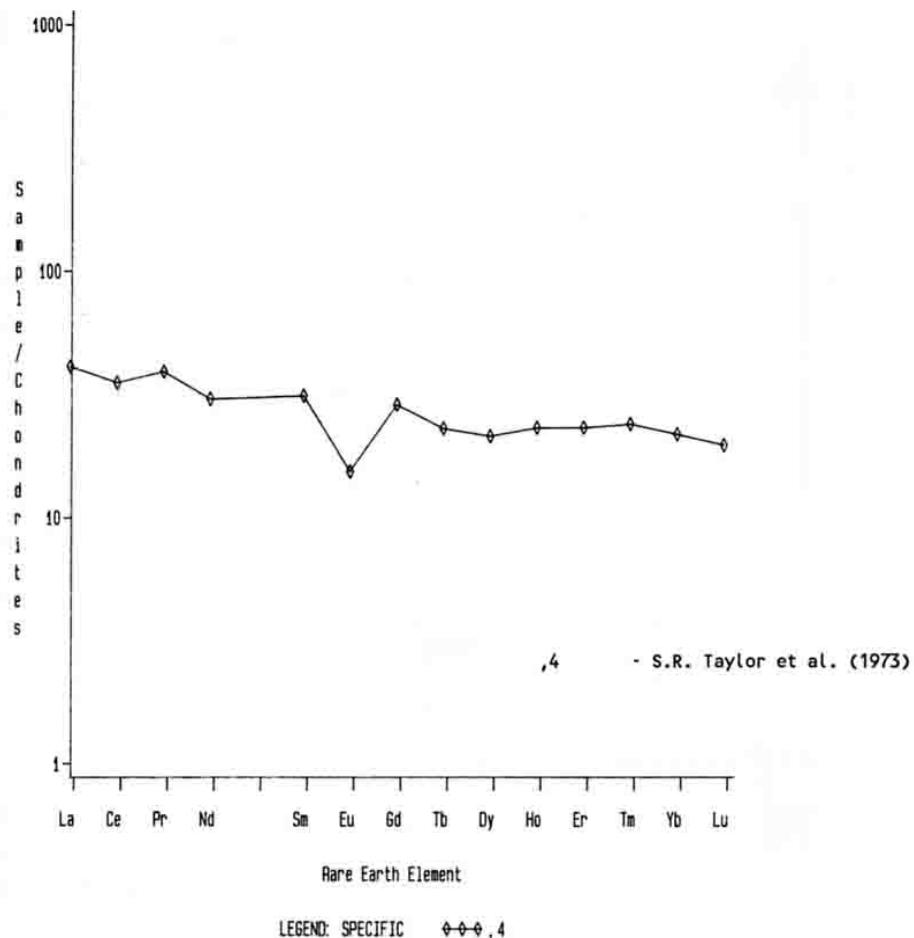


Figure 3. Rare earths in 15324,4.

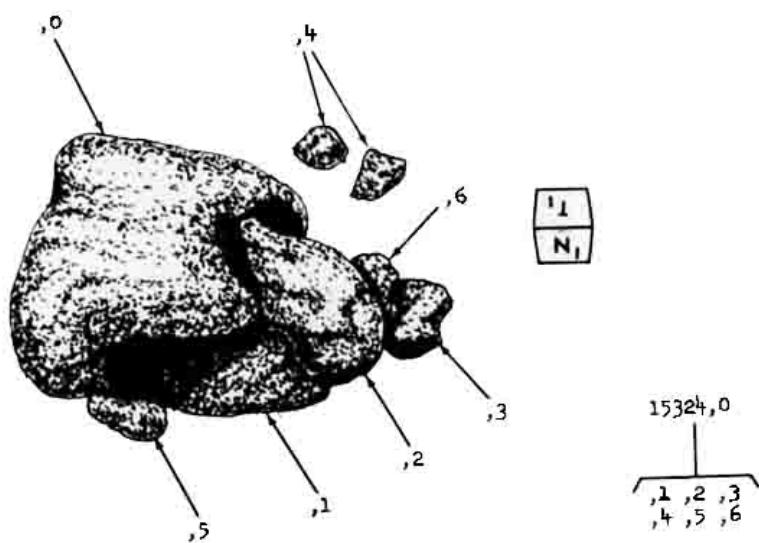


Figure 4. Chipping of 15324.