

INTRODUCTION: 15330 is a tough, glassy, gray-brown, and not very porous regolith breccia (Fig. 1). It contains glass, mineral, and lithic debris including feldspathic breccias, but KREEP basalts are not present or are inconspicuous. It is also low in incompatible element abundances compared with most local regolith breccias. It has zap pits on all sides, including large (greater than 5 mm) ones. Clasts larger than about 4 mm are not present (Fig. 1). 15330 was collected as part of the rake sample from the north-east rim of Spur Crater.

PETROLOGY: 15330 is a clean-looking regolith breccia (Fig. 2) in which the numerous mineral fragments are generally little shocked. Nonetheless, it is not very porous. It contains abundant glass, including devitrified glass, glassy breccias, and the matrix. Colorless, green, yellow, and orange glasses exist as spheres and shards. Some green glass is devitrified. The lithic clasts include the glassy breccias and highlands feldspathic breccias (mainly fine-grained impact melts or granoblastic rocks), and one looks like a noritic anorthosite cumulate. Small mare basalt fragments are present but KREEP basalt fragments appear to be absent.



Figure 1. Post chip view of 15330,0 and its daughters. S-76-26373

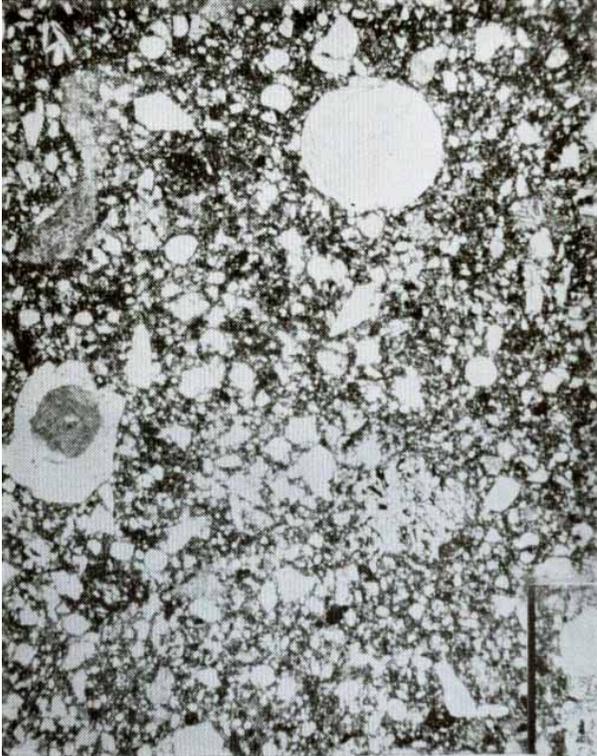


Fig. 2a

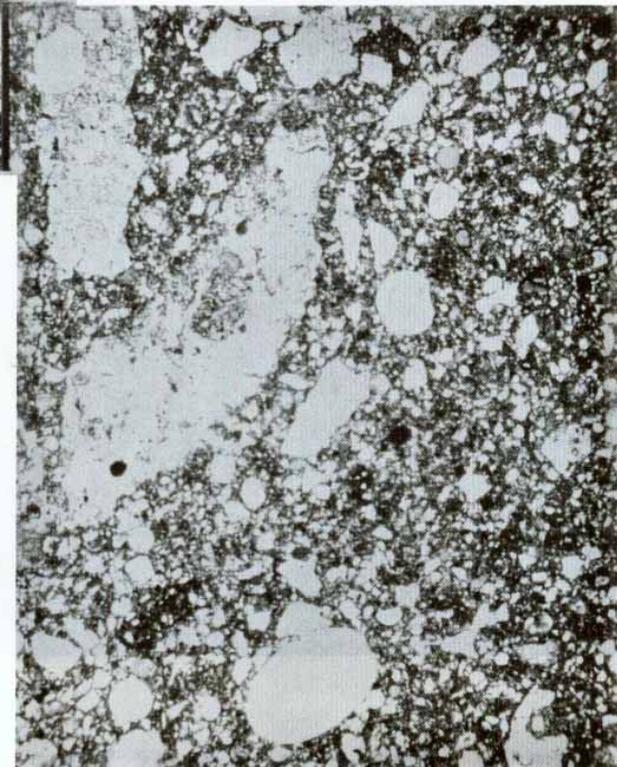


Fig. 2b

Figure 2. Photomicrographs of 15330,8. Transmitted light. Widths about 2mm.
a) shows a devitrified sphere within yellow glass (left), a yellow glass sphere (top center), and a small mare (?) basalt (lower right center).
b) shows a crystalline feldspathic breccia (top left), and a glassy breccia (left center).
Both show other glass spheres and mineral fragments.

CHEMISTRY: Wanke et al. (1977) reported a bulk analysis for major, minor, and trace elements (Table 1, Fig. 3). The sample is not remarkable in major element composition, but is rather lower in incompatible elements than local regolith breccias.

MAGNETICS: Gose et al. (1972) determined a natural remanent magnetic intensity of a little less than 10^{-4} emu/g, using a Develco cryogenic magnetometer. This value is higher than that for igneous rocks (mare basalts).

PROCESSING AND SUBDIVISIONS: Gose et al. (1972) made their measurement using the entire sample. Subsequently it was chipped (Fig. 1). Only ,4 (for chemistry), and ,5 (for thin sections ,8 and ,9) has been used, and much of ,5 remains. ,0 is now 47.3 g.

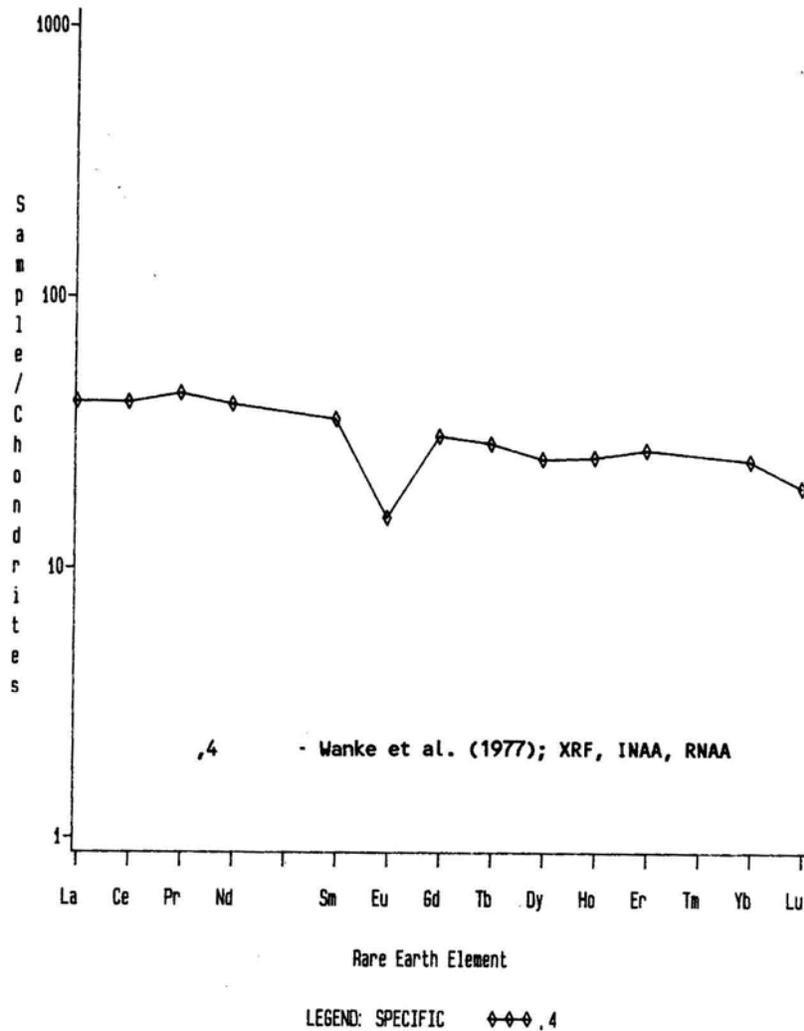


Figure 3. Rare earths in bulk 15330.

TABLE 15330-1. Bulk chemical analysis

		,4	
Wt %	S102	46.22	
	T102	1.12	
	Al2O3	16.3	
	FeO	12.7	
	MgO	11.7	
	CaO	11.7	
	Na2O	0.404	
	K2O	0.125	
	P2O5	0.135	
	(ppm)	Sc	25.4
		V	86.8
Cr		2300	
Mn		1300	
Co		46.6	
Ni		300	
Rb		2.81	
Sr		118	
Y		57	
Zr		196	
Nb		12	
Hf		4.72	
Ba		136	
Th		2.2	
U		0.58	
Pb			
La		13.5	
Ce		35.7	
Pr		4.90	
Nd		24	
Sm		6.36	
Eu		1.06	
Gd		7.63	
Tb		1.35	
Dy		8.02	
Ho		1.8	
Er		5.45	
Tm			
Yb		5.01	
Lu		0.68	
Li		9.8	
Be		1.91	
B			
C			
N			
S	850		
F	51		
Cl	16.4		
Br	0.084		
Cu	11.2		
Zn	42.4		
(ppb)	I		
	At		
	Ga	4990	
	Ge		
	As	24	
	Se	480	
	Mo		
	Tc		
	Ru		
	Rh		
	Pd		
	Ag		
	Cd		
	In		
	Sn		
	Sb		
	Te		
	Cs	130	
	Ta	650	
	W	250	
	Re	1.2	
	Os		
	Ir		
	Pt		
	Au	2.9	
	Hg		
	Tl		
Bi			

(1)

References and methods:

- (1) Wanke et al. (1977).
XRF, INAA, RNAA.