61295 REGOLITH BRECCIA 187.0 g

INTRODUCTION: 61295 is a moderately coherent polymict breccia (Fig. 1) containing a wide variety of clasts. Glass shards, glass beads, and agglutinates are present; some of the glasses appear to be of mare derivation. Only about 10% of the clasts are larger than 1 mm, and most are angular.

61295 was removed from an unburied portion of a 2 m boulder on the southwest rim of Plum Crater, and its orientation is known. Its exposed surface is rounded and has many zap pits.

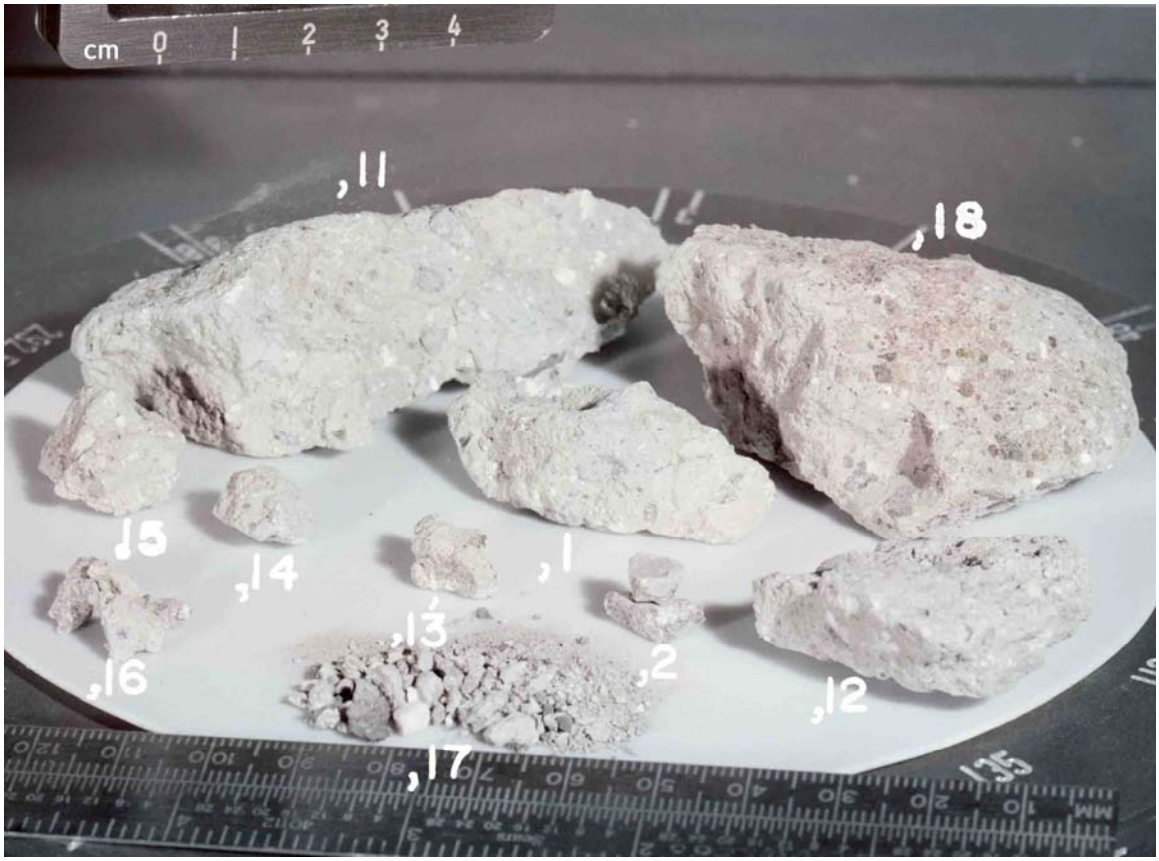

FIGURE 1. S-72-44782.

PETROLOGY: LSPET (1973) depicts 61295 as typical of those polymict, light-gray, moderately friable breccias which have essentially glass-free matrices.

Thin sections are of a polymict breccia containing abundant lithic clasts (Fig. 2). 25% of the rock consists of fragments larger than 200 μm. The matrix is extremely porous and

most fragments, including the smallest, are angular (Fig. 2). The lithic clasts include feldspathic impact basalts, feldspathic granulites, aphanitic breccias, and poikilitic impact melts. Plagioclase and mafic mineral fragments are common. Regolith-derived materials—orange glass shards, clasts and pale green glass balls, and agglutinate fragments—are common. Some of the glasses are evidently of mare origin: Delano (1975) refers to mare components in 61295 but does not detail specific analyses.

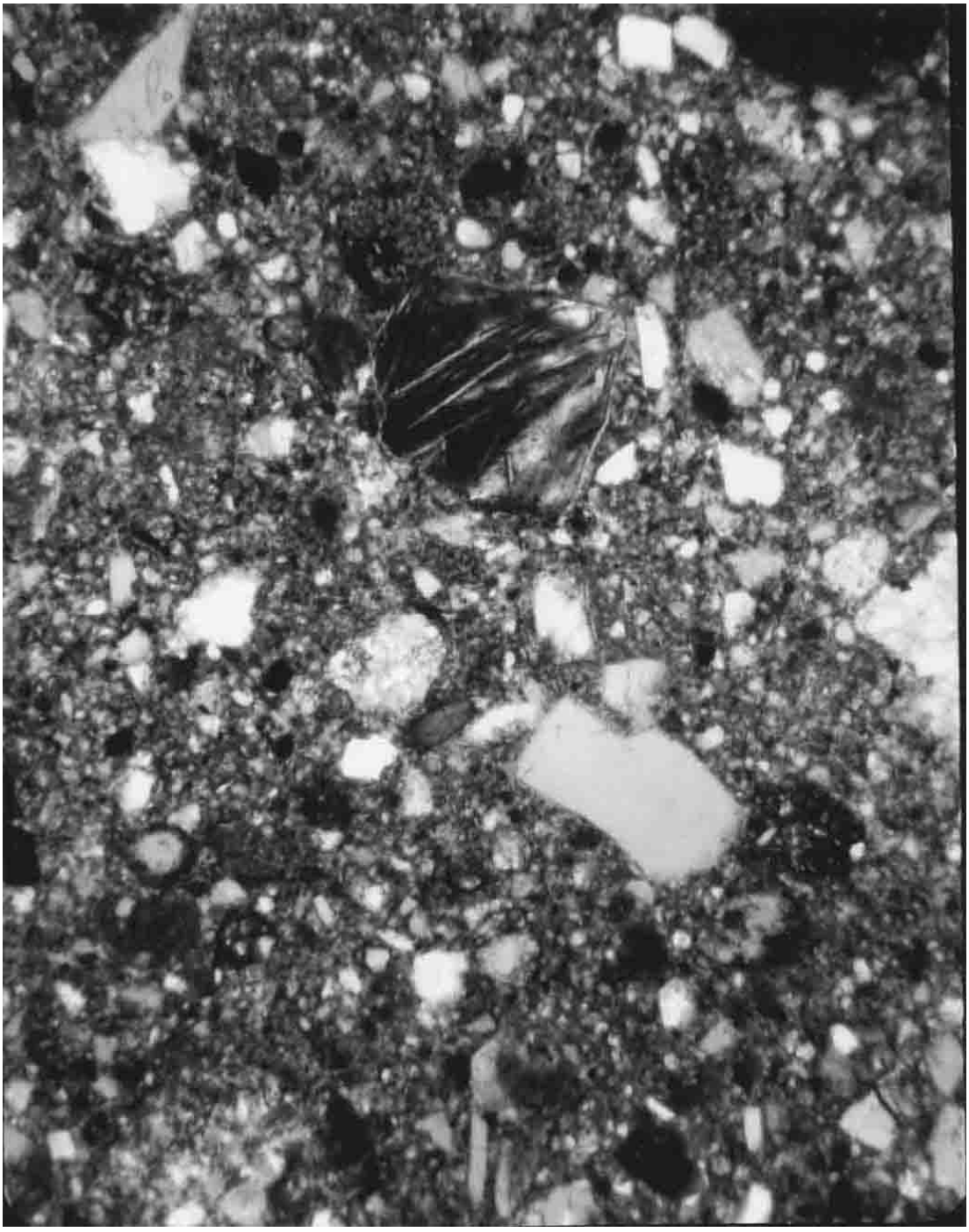

FIGURE 2. 61295,37, general view, pppl. Width 2 mm.

CHEMISTRY: For bulk rock samples, LSPET (1973) presents major and some trace element abundances. Hubbard et al. (1974) present abundances of trace elements including rare-earths. Eldridge et al. (1973) present K, U, Th, and radionuclide data, and Moore et al. (1973) present carbon contents. Nyquist et al. 1974) present Rb, Sr abundances. Little specific comment is made by these authors.

The chemistry is summarized in Table 1 and Figure 3. Although the rock contains regolith-derived fragments, it differs from local soils in its high $A1_2O_3$, and its C content (55 ppm) is significantly lower than most soils (100+ ppm).

RADIOGENIC ISOTOPES AND GEOCHRONOLOGY: The only radiogenic isotope data published on 61295 are Rb-Sr whole rock data by Nyquist et al. (1974), summarized in Table 2.

EXPOSURE AGES: Yokoyama et al. (1974) assess the radionuclide data of Eldridge et al.(1973) as indicating that 61295 is saturated with ^{26}Al. Thus the exposure age of 61295 is long in relation to the half-life of ^{26}Al.

PROCESSING AND SUBDIVISIONS: 61295 has main subdivisions as shown in Figure 1, but many small pieces also exist. A poikilitic impact melt clast was removed from ,12 and part made into a potted butt for thin sections. Bulk matrix ,3 (not shown) was also made into thin sections.

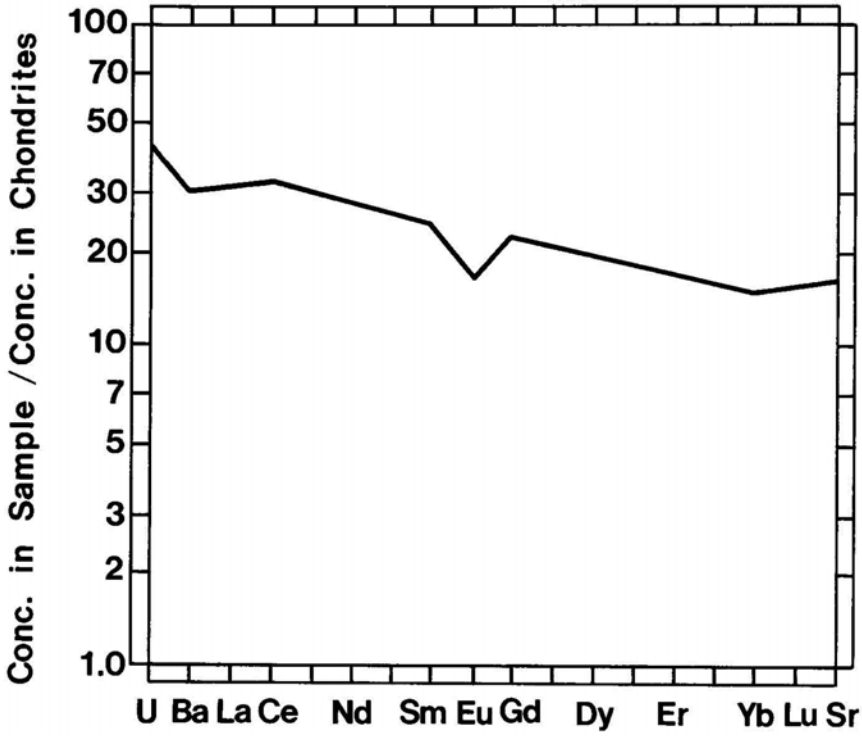

FIGURE 3. Rare earths, from Hubbard et al. (1974).

TABLE 1. Summary chemistry of 61295 bulk rock.

SiO_2	45.2
TiO_2	0.56
Al_2O_3	28.3
Cr_2O_3	0.08
FeO	4.5
MnO	0.06
MgO	4.7
CaO	16.2
Na_2O	0.46
K_2O	0.09
P_2O_5	0.10
Sr	186
La	10.4
Lu	
Rb	2.3
Sc	
Ni	114
Co	
Ir ppb	
Au ppb	
C	55
N	
S	600
Zn	
Cu	

Oxides in wt%; others in ppm except as noted.

TABLE 2. Whole rock Rb-Sr isotopic data (Nyquist et al., 1974).

Rb ppm	Sr ppm	$^{87}Sr/^{86}Sr$	T_{BABI}* b.y.	T_{LUNI}* b.y.
2.308	186.0	0.70130±6	4.28±.15	4.41±.15

*BABI and LUNI adjusted for interlaboratory bias.