

INTRODUCTION: 65055 is an aluminous, basaltic impact melt. Macroscopically it is homogeneous, angular in shape, and very coherent (Fig. 1). This rock was collected from the lower northeast slope of Stone Mountain. It must have been disturbed shortly before collection as zap pits are absent from the “lunar top” but abundant on adjacent sides.



FIGURE 1. S-72-43861.

PETROLOGY: 65055 is described by Vaniman and Papike (1981), who provide microprobe data. It is characterized by an intergranular, subophitic texture with euhedral to subhedral laths of plagioclase (up to 1.5 mm) enclosing anhedral pyroxene (Fig. 2). According to Vaniman and Papike (1981), olivine is absent, and the silicate minerals are extensively zoned (Fig. 3). Metal, troilite, ilmenite and a cryptocrystalline mesostasis are interstitial, accessory phases. Many of the laths are lightly shocked, showing a slight undulose extinction. Rare relict clasts of plagioclase are anhedral, irregular in shape, and tend to be more heavily shocked than the laths.

CHEMISTRY: Analyses of major elements, lithophiles, siderophiles and volatiles in 65055 are presented by Boynton et al. (1976), Christian et al. (1976) and Wasson et al. (1977). Clark and Keith (1973) report natural and cosmogenic radionuclide abundances as determined by gamma-ray spectroscopy.



FIGURE 2. 65055,15. General view, ppl with reflector in. Width 3 mm.

65055 is more aluminous and has lower abundances of rare-earths than the average local soil and most of the Apollo 16 basaltic impact melts (Table 1, Fig. 4). Overall it is very similar to the Station 11 soils, which tend to be somewhat more aluminous and less KREEPy than soils from other stations.

GEOCHRONOLOGY: Jessberger et al. (1977) report total K-Ar ages of 3.94 ± 0.01 b.y. and ^{39}Ar - ^{40}Ar plateau ages of 3.96 ± 0.02 and 3.95 ± 0.02 b.y. for two splits of basalt.

EXPOSURE AGES: Clark and Keith (1973) give natural and short-lived cosmogenic radionuclide abundances. Jessberger et al. (1977) determined ^{38}Ar exposure ages of 2.4 ± 1.1 and 2.2 ± 0.5 m.y. for two splits of basalt, consistent with the excavation of 65055 by the South Ray Crater event.

PROCESSING AND SUBDIVISIONS: In 1975, 65055 was cut into three main pieces, including a slab (Fig. 5). Allocations to investigators were made from subdivisions of the slab. Thin sections have been made from splits of the slab and other exterior documented chips.

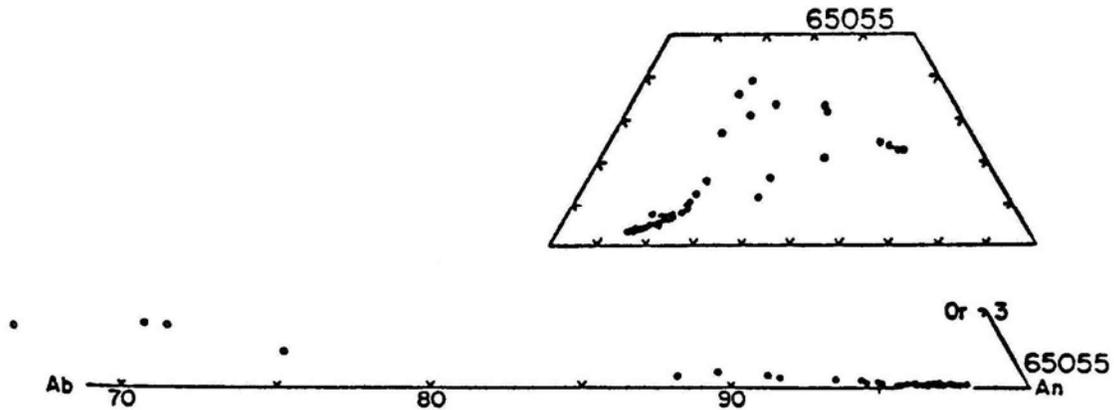


FIGURE 3. Mineral compositions; from Vaniman and Papike (1981).

TABLE 1. Summary chemistry of 65055.

SiO_2	45.4	Sr	140
TiO_2	0.38	La	6.8
Al_2O_3	28.5	Lu	0.33
Cr_2O_3	0.10	Rb	1.0
FeO	4.3	Sc	7.6
MnO	0.06	Ni	235
MgO	4.5	Co	21
CaO	16.1	Ir ppb	10.1
Na_2O	0.46	Au ppb	4.0
K_2O	0.073	C	
P_2O_5	0.13	N	
		S	
		Zn	0.6
		Cu	

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

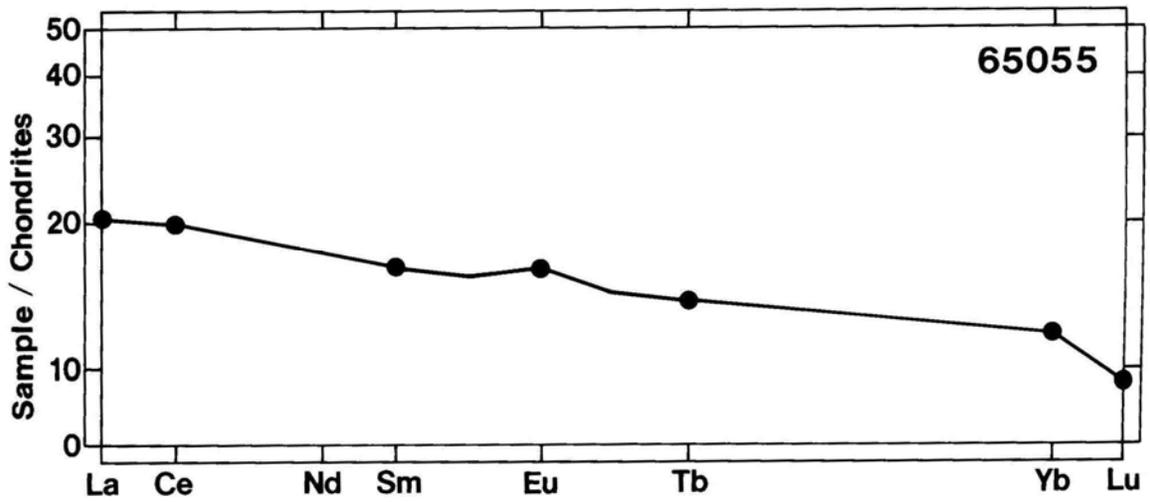


FIGURE 4. Rare earths; from Boynton et al. (1976).



FIGURE 5. Slab subdivision. Scale in mm. S-75-22694.