

64585

64585 FINE-GRAINED BASALTIC/POIKILITIC IMPACT MELT 4.70 g

INTRODUCTION: 64585 is a coherent, medium gray, fine-grained impact melt (Fig. 1). One large (5 mm) tabular glass clast is present (Phinney and Lofgren, 1973). It is a rake sample from the rim of a subdued doublet crater on Stone Mountain. Zap pits are rare on all surfaces.



FIGURE 1. Scale in mm. S-72-55315.

PETROLOGY: Warner et al. (1973) include this rock in a general petrographic discussion of Apollo 16 rake samples. It is a fine-grained impact melt with randomly oriented plagioclase laths and abundant glassy mesostasis. Texturally it grades from subophitic to ophitic or poikilitic with elongate oikocrysts (up to ~0.5 mm). Plagioclase relicts are scattered through the rock. An electron microprobe analysis of the mesostasis is given by Warner et al. (1973) and reproduced here as Table 1. Compositions of metal with and without coexisting schreibersite are presented by Gooley et al. (1973) and reproduced here as Table 2.



FIGURE 2. 64585,3, general view, ppl. Width 1 mm.

PHYSICAL PROPERTIES: Pearce and Simonds (1974) report the results of a room temperature hysteresis curve determination on 64585. The very low saturation remanence to saturation magnetization ratio ($J_{RS}/J_S = 0.0045$) indicates that virtually all of the ferromagnetic phases in this rock are $>300 \text{ \AA}$, multidomain particles. Fe^0/Fe^{2+} is 0.246 and total Fe^0 is 1.15 wt % (Pearce and Simonds, 1974).

PROCESSING AND SUBDIVISIONS: In 1972 a single chip (,1) was removed and allocated to Phinney for thin sectioning and petrography. The magnetic studies were done on the potted butt of ,1.

TABLE 1. Composition of mesostasis (wt%) in 64585 (from Warner et al., 1973).

SiO₂	54.5
TiO₂	2.8
Al₂O₃	14.5
Cr₂O₃	0.2
FeO	7.0
MgO	7.3
CaO	13.5
Na₂	0.2
K₂O	0.2

TABLE 2. Compositions of metal and schreibersite (wt%) in 64585, from Warner et al., (1973).

	Ni	Co	Fe	P
Metal (without schreibersite)	6.6-7.4	0.6	-	0.0-0.3
Metal (with schreibersite)	4.9	0.6	92.6	0.2
Schreibersite	9.4	0.4	75.1	15.7