

INTRODUCTION: 64559 is a coherent, medium gray, basaltic impact melt with several stringers and clasts of anorthosite (Fig. 1). It is a rake sample collected from the rim of a subdued doublet crater on Stone Mountain. Zap pits and vesicles are absent.



FIGURE 1. Smallest scale division in mm. S-72-55352.

PETROLOGY: Warner et al.(1973) include this rock in a general petrographic discussion of Apollo 16 rake samples. It is a fine-grained basaltic impact melt with abundant glassy mesostasis and many plagioclase clasts (Fig. 2). An electron microprobe

analysis of the mesostasis is given by Warner et al.(1973) and reproduced here as Table 1. Some of the clasts have been smeared out to elongate veinlets. Accessory phases in the basalt include Fe-metal, associated troilite and schreibersite, and cohenite (Gooley et al., 1973). Compositions of Fe-metal and coexisting schreibersite are provided by Gooley et al. (1973) and reproduced here as Table 2.



FIGURE 2. 64559,4, impact melt and anorthosite clast, ppl. Width 1 mm.

PHYSICAL PROPERTIES: Pearce and Simonds (1974) report the results of a room temperature hysteresis curve determination on 64559. The very small saturation remanence to saturation magnetization ratio ($J_{RS}/J_S = 0.0049$) indicates that the ferromagnetic phases in this rock are dominantly $>300 \text{ \AA}$, multidomain particles. Fe^0/Fe^{2+} is 0.242 and total Fe^0 is 1.08 wt% (Pearce and Simonds, 1974).

PROCESSING AND SUBDIVISIONS: In 1972 three chips were removed and one of these (,1) allocated to Phinney for thin sectioning and petrography. The magnetic studies were made on the potted butt of ,1.

TABLE 1. Composition of mesostasis in 64559
(from Warner et al., 1973).

SiO₂	52.7
TiO₂	0.4
Al₂O₃	18.2
Cr₂O₃	0.2
FeO	6.5
MgO	7.4
CaO	13.6
Na₂O	0.1
K₂O	0.4

TABLE 2. Composition of metal and schreibersite in 64559
(from Gooley et al., 1973).

	<u>Ni</u>	<u>Co</u>	<u>Fe</u>	<u>P</u>	<u>S</u>
Metal	4.2	0.6	95.5	0.1	-
Schreibersite	13.9	0.6	71.6	15.5	0.1