

INTRODUCTION: 64538 is composed of three distinct lithologies in sharp contact: a coherent, medium gray, glassy matrix breccia; a coherent, dark gray, crystalline impact melt; and a moderately coherent, white, anorthositic breccia (Fig. 1). Thin, glassy veins cut the glassy breccia and the impact melt.

This rock is a rake sample from the rim of a subdued doublet crater on Stone Mountain. Zap pits are common on all surfaces indicating a complex exposure history.



FIGURE 1. S-79-40480.

PETROLOGY: The glassy matrix breccia makes up the bulk of 64538 and is composed of many clasts of plagioclase and cataclastic anorthosite welded together by a continuous matrix of partially crystallized glass (Fig. 2). Rare mafic minerals also occur as clasts. Accessory phases include Fe-metal, troilite and ilmenite.

The impact melt is very fine-grained with a faintly poikilitic texture. Clasts of plagioclase, rare mafic grains and Fe-metal (some rusty) are present. The contact with the anorthositic breccia is very angular (Fig. 2) indicating that some remobilization of these lithologies has probably occurred. Portions of the impact melt appear to have been frozen while being sheared off into the anorthositic breccia.

The anorthositic breccia consists of a cataclastic anorthosite with several clasts of crystalline impact melt that are probably related to the lithology described above (Fig. 2). Olivine and pyroxene are interstitial to the larger plagioclase grains. Rare Fe-metal is present.

PROCESSING AND SUBDIVISIONS: In 1979 two chips (,1 and ,2) that sampled all three lithologies were allocated for thin sections.

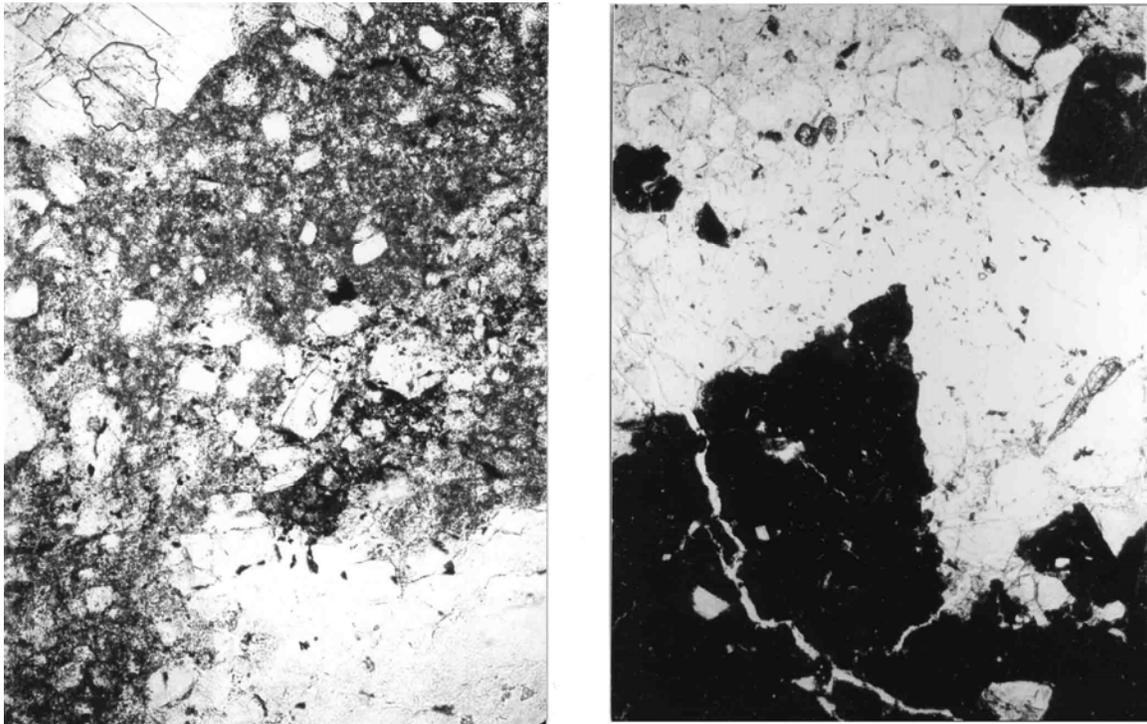


FIGURE 2. a) 64538,5, glassy matrix breccia, ppl. Width 1 mm.
b) 64538,6, impact melt and anorthositic breccia, ppl. Width 2 mm.