67616 FINE-GRAINED IMPACT MELT 21.3 g

INTRODUCTION: 67616 is a gray, coherent breccia (Fig. 1) made up of tiny plagioclase clasts bonded by ~10-15% fine-grained mortar which is probably melt but could be metamorphic. It is a rake sample collected 30 m east of the White Breccia boulders. Many zap pits are present on all surfaces.

FIGURE 1. Smallest scale division in mm. S-72-49574.

PETROLOGY: 67616 is a coherent, very plagioclase-rich breccia (Fig. 2). Abundant fragments of plagioclase, mainly in the 10-30 μm size range, are held together by a mortar of more mafic crystalline material. Large clasts (up to 400 μm) are mainly unstrained, unshocked plagioclases. The total plagioclase content is more than 90%.

The fine-grained (~3-5 μm) mortar composes 10-15% of the rock and is more mafic than the bulk rock, with about equal proportions of plagioclase and mafic minerals. Its texture is equivocal as to melt or metamorphic origin, but the presence of plagioclase laths suggests that a melt origin is more likely.

There is a fine-scale banding in the breccia, occurring in fans covering areas of 1 mm^2 (Fig. 2). The bands are ~20-30 μm wide. The dark bands appear to be concentrations of pyroxene, the light concentrations of plagioclase. The features suggest spherulitic crystallization of a melt.

PROCESSING AND SUBDIVISIONS: Small chips were removed, and from some of them thin section ,2 was made.

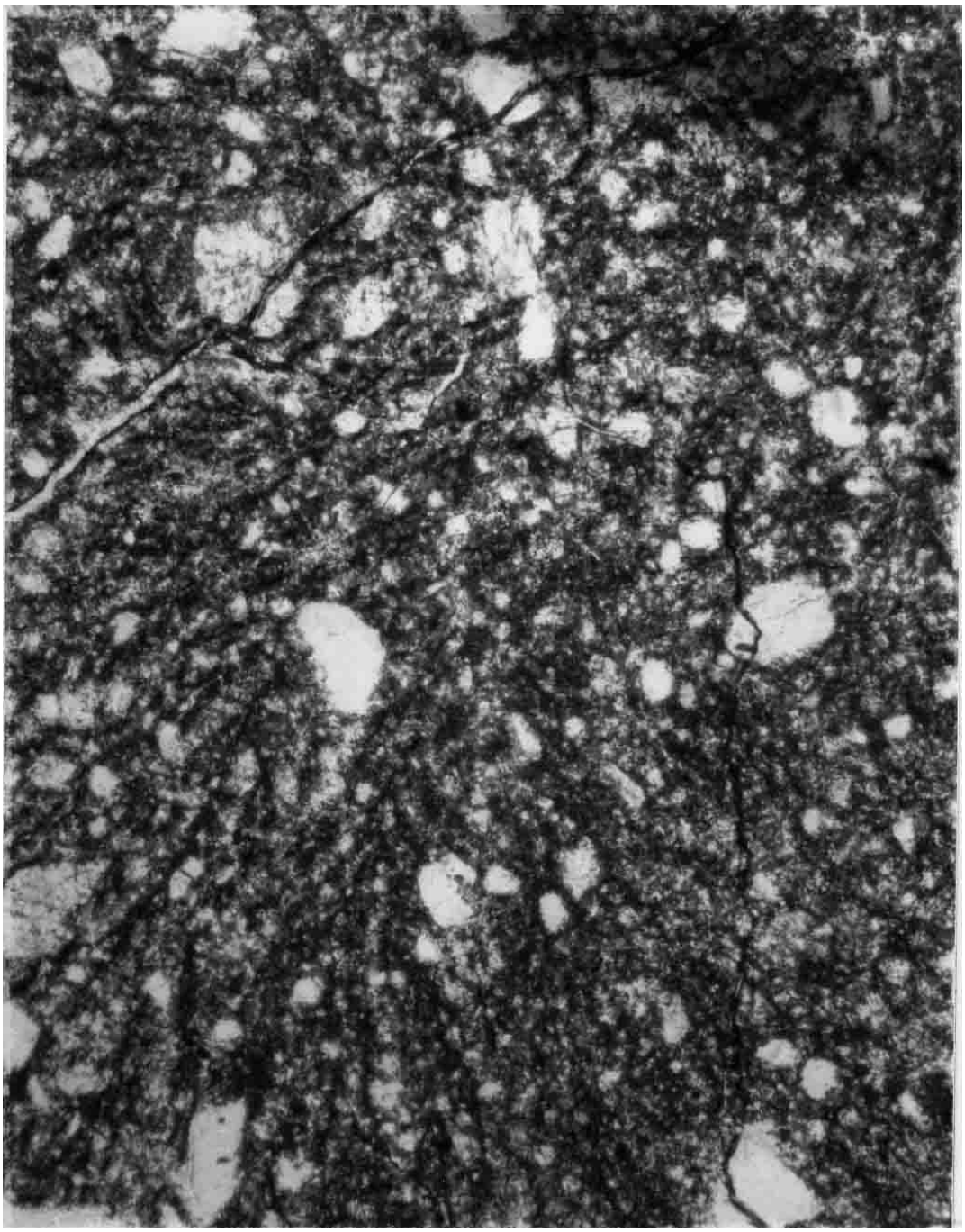

FIGURE 2. 67616,2. General view, ppl. Width 2 mm.