

14320

This breccia was collected from North Boulder Field from station H during EVA2. The sample has not been identified in lunar surface photographs so the lunar location is only tentative and the lunar orientation is unknown. Sample 14320 was returned in weigh bag 1038.

PHYSICAL CHARACTERISTICS

Mass

64.9 g

Dimensions

5.5 x 5.0 x 2.5 cm

This is a medium gray, coherent, polymict breccia.

SURFACE FEATURES

Glass-lined zap pits are evenly distributed on all sides of the rock with a density of approximately 20 pits per square centimeter. The pits range in size from less than 0.1 mm to 2 mm.

There are two orthogonal sets of planar fractures parallel to the W and the B faces of the sample.

PETROGRAPHIC DESCRIPTION

This polymict breccia has 10% clasts larger than 1 mm and 90% matrix smaller than 1 mm. There are both mesocratic and leucocratic lithic fragments. The bulk of the rock is composed of angular and roughly equant fragments of aphanitic material set in a lighter gray to white groundmass.

A thin, irregular vein of dark brown vesicular glass fills one small crack.

This sample appears similar to 14321 in hand specimen and in thin section.

Thin section 14320,7 has approximately 25% clasts and 75% matrix. The matrix has a salt and pepper appearance with very fine white and dark grains. Approximately 10% of the rock is white feldspar fragments ranging down to less than 0.1 mm in size. Trace amounts of cinnamon brown pyroxene, pale greenish-yellow material, deep red translucent feldspar, and a black opaque mineral. The lithic clasts present in 14320,7 are of a dark and light breccia with abundant mineral fragments. Many of the fragments are too small for identification. Those that are large enough are pyroxene, olivine and plagioclase with minor opaques. The matrix contains 10-15% of a fine-grained dark material which includes small opaque fragments.

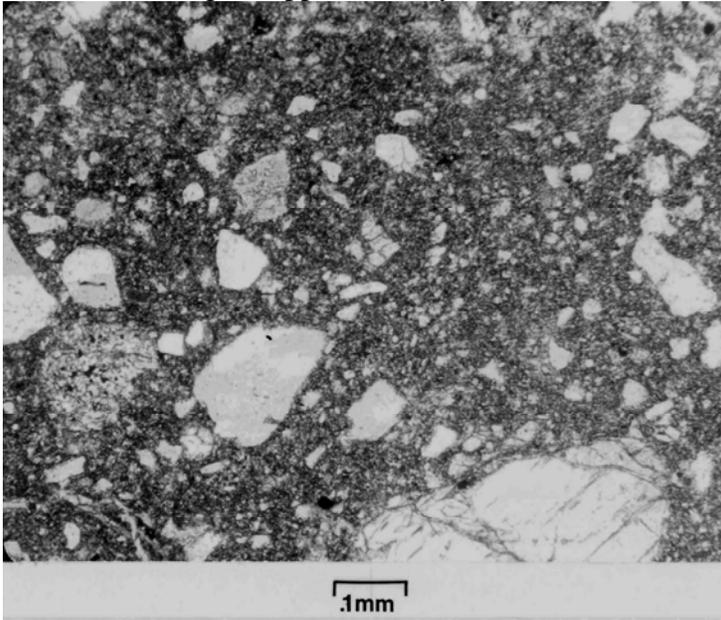
DISCUSSION

Sample 14320 was placed in the F₄ category of Wilshire and Jackson (1972) and is described as coherent with dark clasts. Warner (1972) placed it in his metamorphic grade 6, and Chao et al. (1972) list it as a shocked, strongly annealed, Fra Mauro breccia (2c). Quaide and Wrigley (1972) list it as an annealed breccia, and von Engelhardt et al. (1972) classify it as glass poor with a crystalline matrix. Simonds et al. (1977) classify it as a crystalline matrix breccia (CMB).

It is described by Roedder and Weiblen (1972) as having had a complex thermal history. Some of the parent rocks were said to have undergone slow cooling. Potassium enriched clasts were observed in this sample, as in 14303, 14319, and 14321.



Width of image is approximately 6 cm, S-71-29196



14320,7