

68515 DILITHOLOGIC OR POLYMICT BRECCIA; 236 g
PARTLY GLASS-COATED

INTRODUCTION: 68515 consists of white, anorthositic breccia which locally is mixed with angular aphanitic to basaltic impact melt fragments (Fig. 1). Part of the sample is coated with glass (Fig. 2). 68515 is a rake sample and fairly tough. Zap pits are most prominent on the anorthositic breccia area, but a few are present on the glass-coated surface.

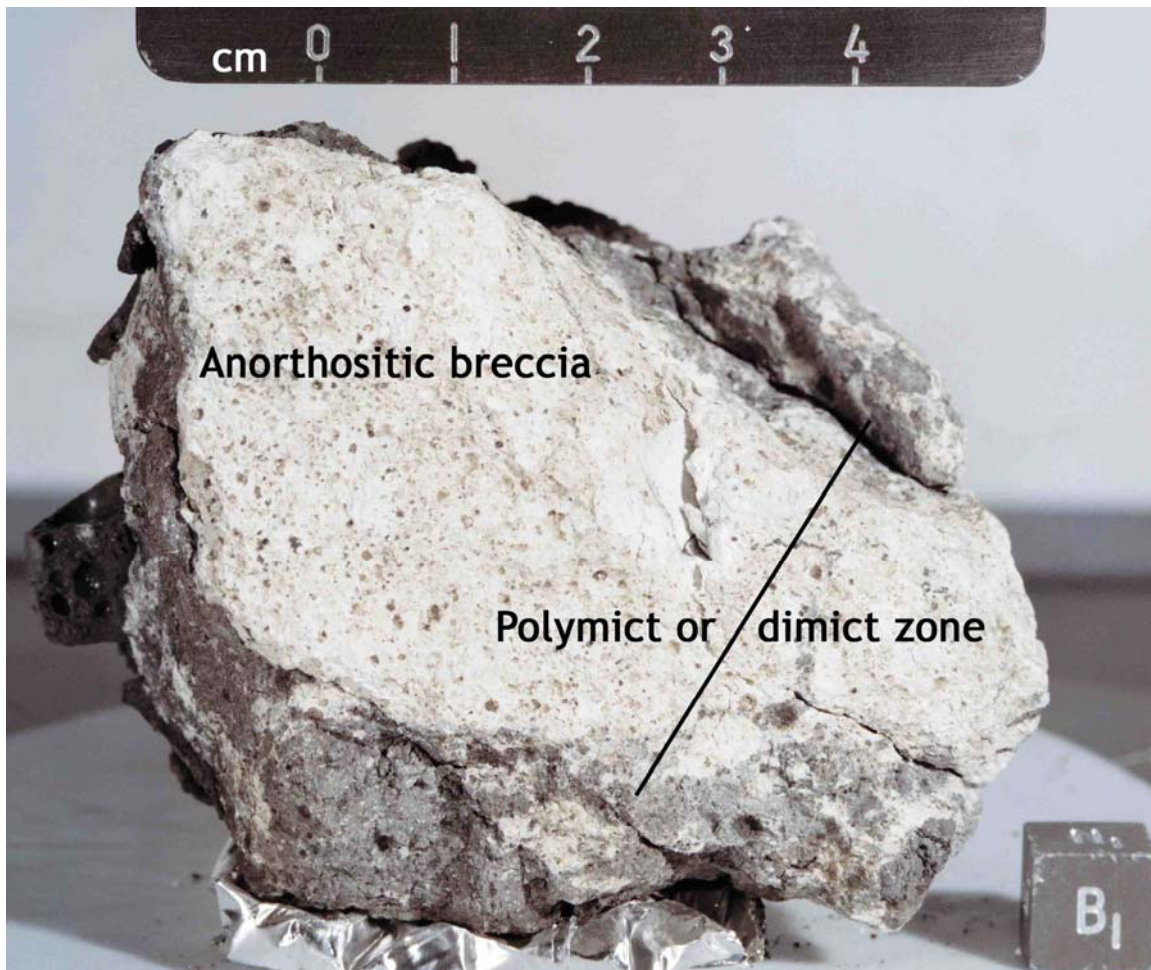


FIGURE 1. S-72-43456.

PETROLOGY: Steele and Smith (1973) refer to 68515 as a complex, black and white breccia with some devitrified glass; they do not provide probe data. Their thin section (,1) consists of a cataclastic anorthosite with few mafic minerals but containing angular aphanitic and glassy impact melt fragments which have plagioclase laths (Fig. 3). One edge of the section is a clear or gray glass, devitrified adjacent to the breccia and probably the glass coat. Thin sections of glass coat (,13), polymict material (,14) and white material (,15) were cut from undocumented chips for the present study.

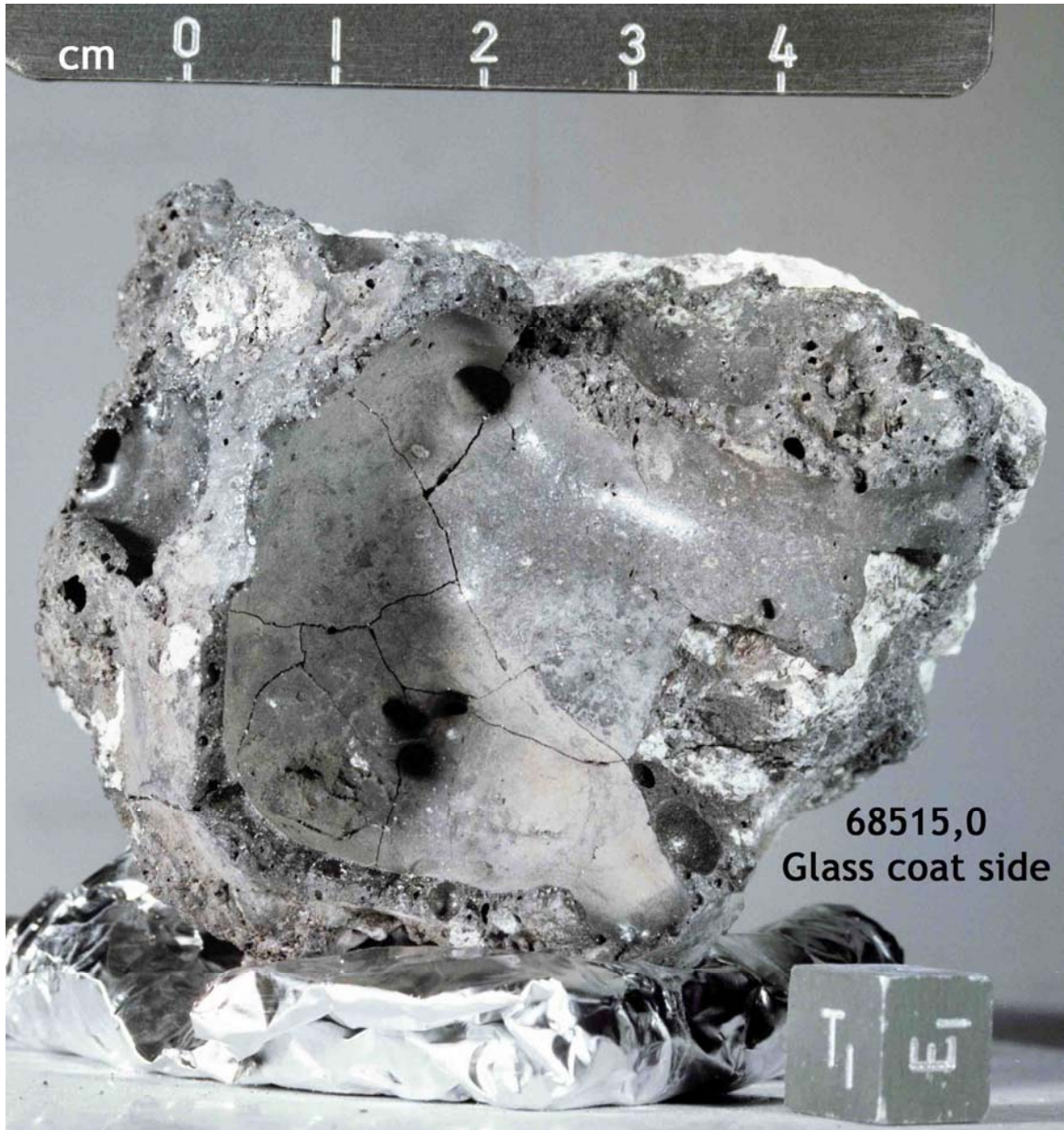


FIGURE 2. S-72-45273.

The glass coat (,13) is vesicular and largely devitrified (Fig. 3); undevitrified patches show flow banding. A few lithic clasts, including basaltic and poikilitic impact melt fragments, are present. The polymict area consists of cataclastic anorthosite and a variety of brown glassy and basaltic fragments (Fig. 3). The white chips are all similar cataclastic anorthosites (Fig. 3) with minor mafic minerals which appear to be orthopyroxene.

The macroscopic and thin section studies indicate that 68515 may be similar to other Apollo 16 “black-and-white” rocks—a fairly pure light phase with fragments of dark material of fairly restricted lithology were mobilized together, with the dark material acting more coherently. In the case of 68515, a glass coat was splashed on later.

PROCESSING AND SUBDIVISIONS: 68515 has not been sawn or substantially subdivided, though several small fragments of undocumented location have been produced during handling. From some of these the thin sections have been made.

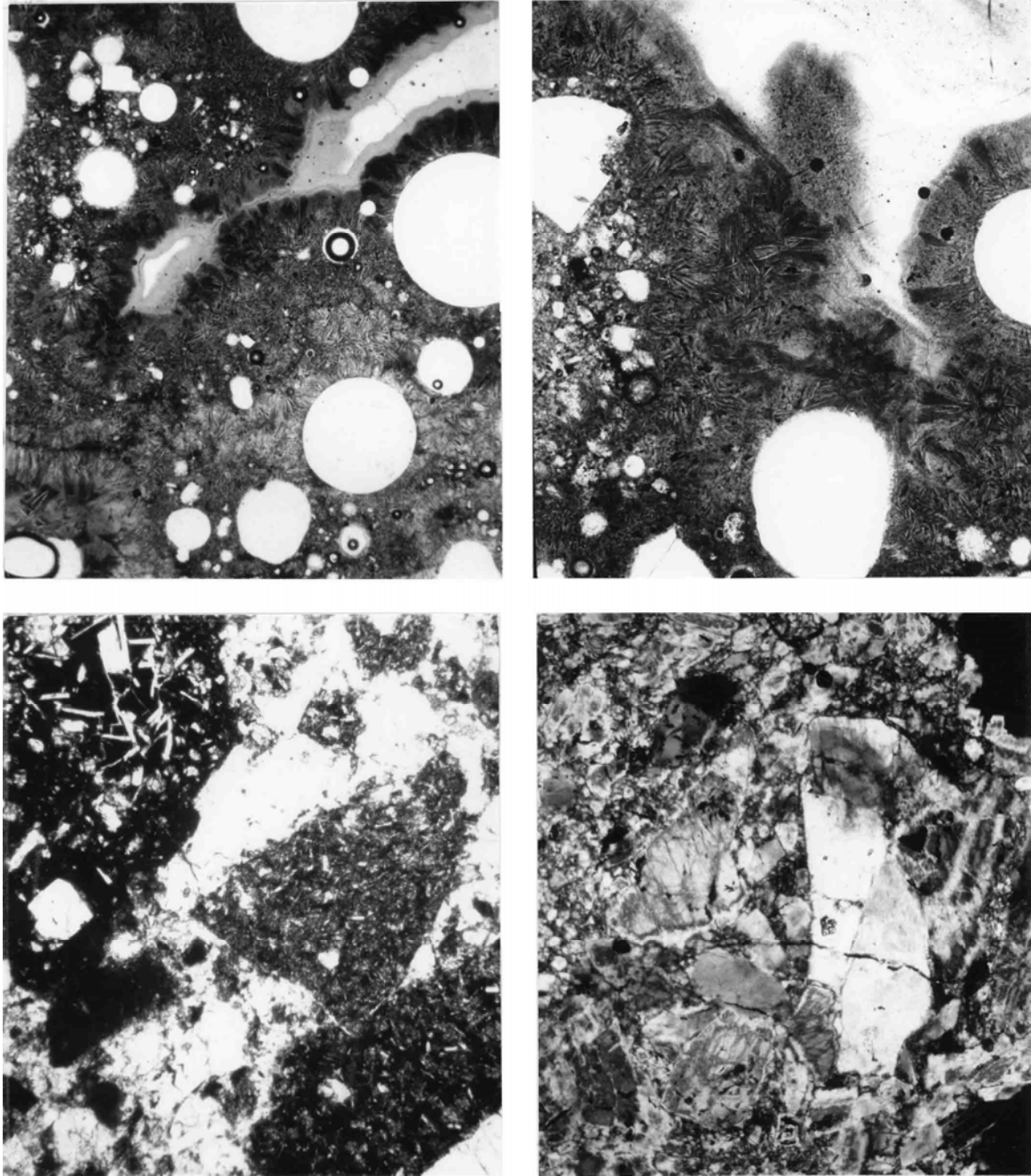


FIGURE 3.

- a) 68515,13. Glass coat, ppl. Width 2 mm.
- b) 68515,13. Glass coat and breccia clast (left); clear glass at top, ppl. Width 1 mm.
- c) 68515,1. Polymict or dilithologic breccia, ppl. Width 2 mm.
- d) 68515,15. Anorthosite clast, xpl. Width 2 mm.