

## 14313

Breccia sample 14313 was collected during the second EVA at Station G1, 150 m east of the LM, on the north rim crest of North Triplet Crater. It was placed in documented bag 27N. Its lunar location and orientation are well documented.

### PHYSICAL CHARACTERISTICS

Mass	Dimensions
144 g	6 x 6 x 4 cm

This is a medium light gray, coherent, fragmental breccia with a distinctive shape due to a prominent notch produced by spalling along two sets of fractures intersecting at an angle of 105°.

### SURFACE FEATURES

All surfaces have a light to moderate density of glass-lined zap pits (20 - 30 per square centimeter). The pits range from 0.1 - 1.0 mm in diameter (see Twedell et al., 1978).

Sample 14313 is described by Morrison et al. (1972) as having large crater densities on all major surfaces. Its lunar orientation is well documented by lunar surface photography (Sutton et al., 1971). The tumbling history was investigated and is presented in diagrammatic form in the article by Morrison et al. (1972, p. 2776).

There are two well defined fractures, one of which extends along the length of the rock.

### PETROGRAPHIC DESCRIPTION

This sample is a polymict, fragmental breccia with clasts larger than 1 mm comprising 25 - 30% of the rock, and fine-grained matrix the other 70 - 75%.

Thin section 14313,14 contains only about 10% lithic clasts (> 1 mm) with no mineral fragments that large. The clasts are angular to rounded rock fragments which appear to be mostly crystalline with well defined boundaries. The clast composition ranges from 20% feldspar and 80% olivine in mesocratic clasts to 80% feldspar and 20% olivine in leucocratic clasts. Intermediate clasts contain 5 percent pyroxene. The matrix appears to be 70% clear subhedral feldspar grains 0.5 mm in size and 30% pyroxene grains < 0.1 mm in size, with minor amounts of olivine of about 0.1 mm grain size. The matrix is texturally homogeneous but there are inhomogeneities in matrix mineralogy. There is approximately 30% brownish-yellow "glass" in the matrix. There are abundant glass spheres and masses of glass present along with a small amount of spinel.

### DISCUSSION

Sample 14313 has been studied extensively by a consortium of nine laboratories. The mineralogy, petrology, and petrogenesis were investigated by Floran et al. (1972). Sample 14313 was described by them to be a coherent, polymict breccia with a complex history of comminution and reagglomeration. Five thin sections were examined: 14313,7; 14313,39; 14313,40; 14313,41; and 14313,42, but these originated from only two parents: 14313,7 came from 14313,3 and the parent of the others is 14313,35. The dominant clast types were listed as (1) noritic rock fragments, (2) monomineralic fragments, (3) microbreccia clasts, and (4) glassy fragments including glass spherules.

These glass spherules are described as chondrules and chondrule-like bodies by King et al. (1972). Mare-type basalt clasts are described as rare by Floran et al. (1972). They found the matrix of the breccia to be composed primarily of fine particles of brownish glass. Varying degrees of shock damage to the clasts were observed, ranging from unshocked through shock-melted fragments. A sequence of four unrecrystallized microbreccias was recognized and recrystallized clasts are also present. The abundance of micronorite clasts in 14313 are interpreted as an indication that noritic rocks were an important pre-Imbrium rock type in the Imbrium Basin area. 14313 was assigned to Group I of Lindsay's classification. He estimated 10% of the sample to be glass, most of which is colorless. Plagioclase and pyroxene are the dominant mineral phases. It was also described as a vitric matrix breccia (VMB) by Simonds et al. (1977), and as a regolith breccia by Quaide and Wrigley (1972). Chao et al. (1972) list it as a compact, nonporous, regolith microbreccia (1b). It is listed as an F<sub>2</sub> by Wilshire and Jackson (1972) and placed in Warner's (1972) lowest metamorphic grade facies (Group 1).

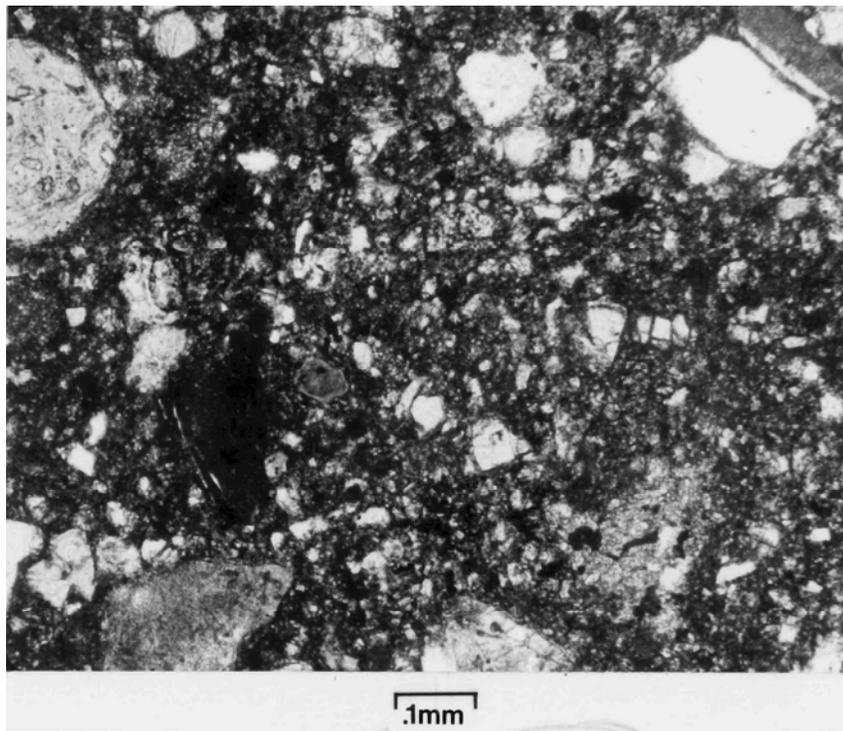
### SAMPLE MODELS AND GENEALOGIES

In order to facilitate the job of determining specific sample orientation and orientation within the parent, as well as for historical interest, models of the larger lunar samples have been constructed by the curatorial staff. Photographs of the models made of Apollo 14 samples are included in this section to acquaint the scientific community with their availability and to help lunar scientists identify the original location of their sample within the parent rock.

Genealogies of several Apollo 14 samples have been made and are also included. These genealogies do not reflect any processing which has taken place since the first thin section was made of each sample. It is hoped that these methods of illustrating samples will prove useful, and will become a routine part of sample documentation procedure.

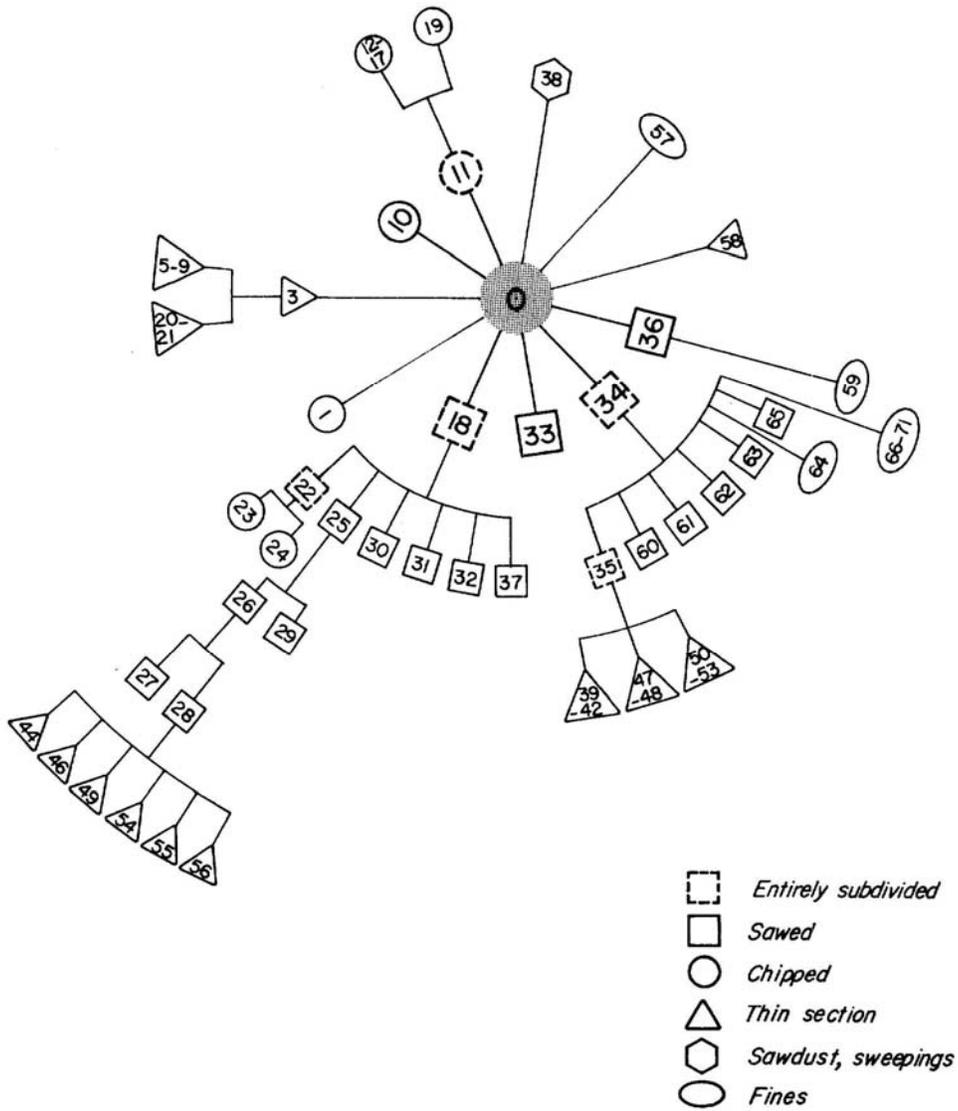


S-71-29134



14313,41

14313



Sample Genealogy