

INTRODUCTION: 67749 is a pale-colored, heterogeneous, moderately friable breccia (Fig. 1). It contains a distinct clast of basaltic-textured iron-rich KREEP. It is a rake sample collected halfway between the White Breccia boulders and House Rock, and has many zap pits on most of its surface.



FIGURE 1. Smallest scale division in mm. S-72-49570.

PETROLOGY: Steele and Smith (1973) refer to 67749 as a “partly recrystallized breccia; one large KREEP-basalt clast” with ~30% matrix (defined as material less than 5  $\mu\text{m}$  in diameter).

The breccia is heterogeneous and polymict with several large lithic clasts. The matrix texture is sub-equigranular, tending towards granoblastic. There is little material finer than a few microns and the texture is suggestive of minor recrystallization of a fragmental breccia (Fig. 2). Mafic minerals compose about 10% of the matrix. Analyses are shown in Figure 3. Matrix plagioclase ranges from  $\text{An}_{98-93}$  with less than 0.1% Fe (Fig. 4 of Steele and Smith, 1973). Lithic clasts larger than 500  $\mu\text{m}$  include cataclastic anorthosite (or shocked plagioclase), a basaltic impact melt, and a KREEP basalt clast.

The KREEP basalt clast (Fig. 2) contains 35-40% plagioclase, 35-40% pyroxene, 5% ilmenite, and ~20% mesostasis (glass and accessory phases). Plagioclase occurs in laths ~50 x 200  $\mu\text{m}$ , and pyroxene as interstitial grains ~300  $\mu\text{m}$  in diameter. The plagioclase ranges from  $\text{An}_{98-93}$  (Steele and Smith, 1973) and the pyroxenes are iron-rich (Fig. 4). The clast shows brittle fracture displacement and many pyroxenes have shock lamellae. The uniform, clast-free texture and the Fe-rich mafic minerals and sodic plagioclases suggest that this clast is a fragment of volcanic KREEP, not an impact melt.

PROCESSING AND SUBDIVISIONS: Small chips were taken to make thin section ,1.

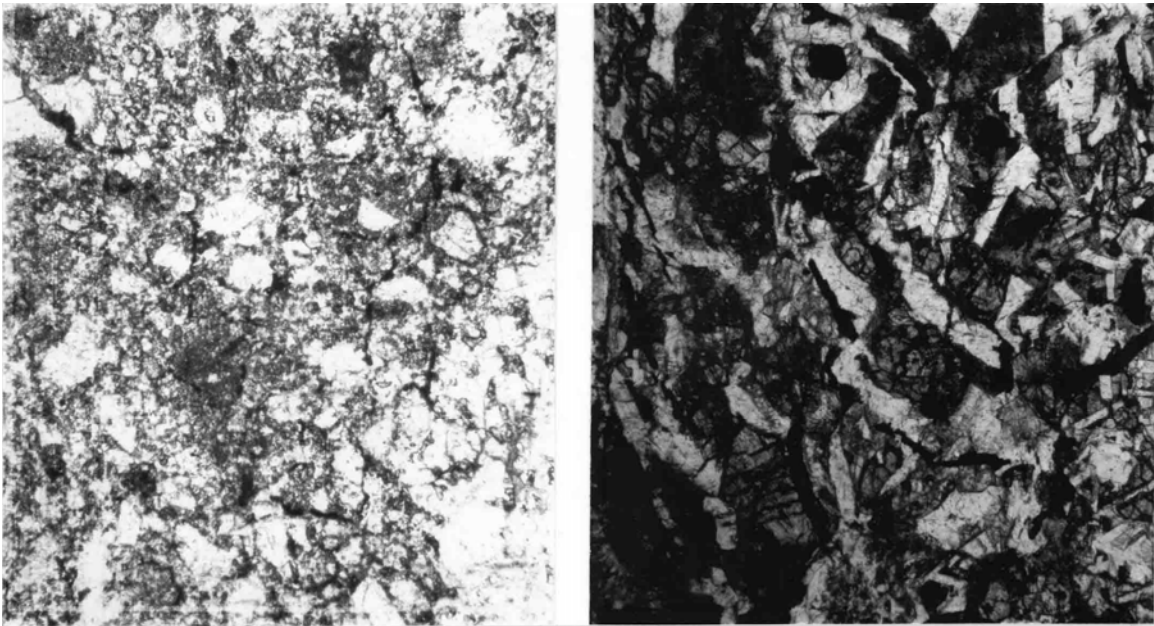


FIGURE 2. 67749,1.  
a) Matrix, ppl. Width 2 mm  
b) KREEP basalt clast, ppl. Width 2 mm.

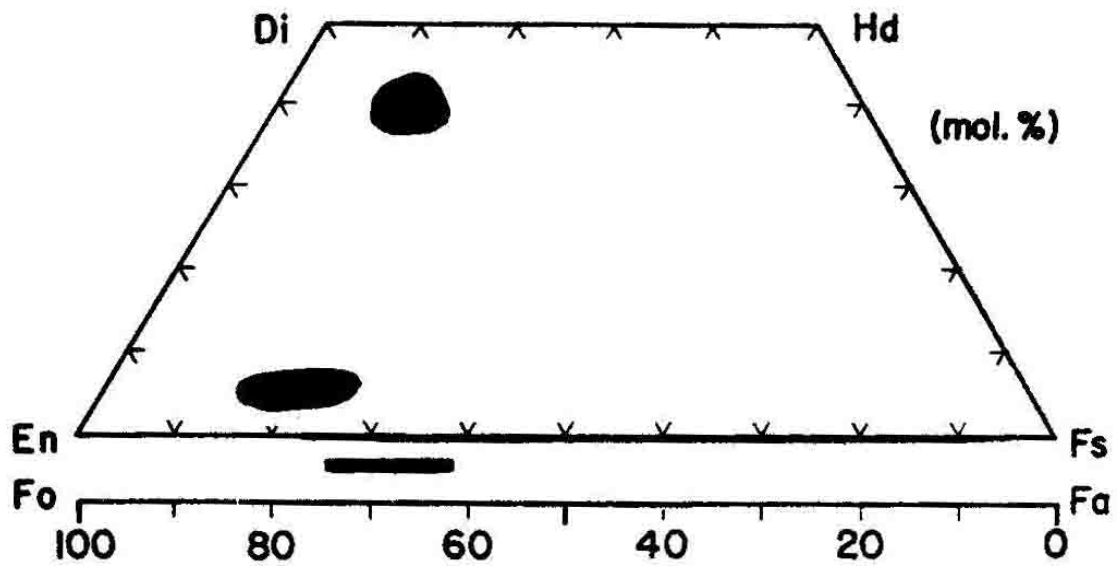


FIGURE 3. Pyroxene and olivine compositions of matrix, from Steele and Smith (1973).

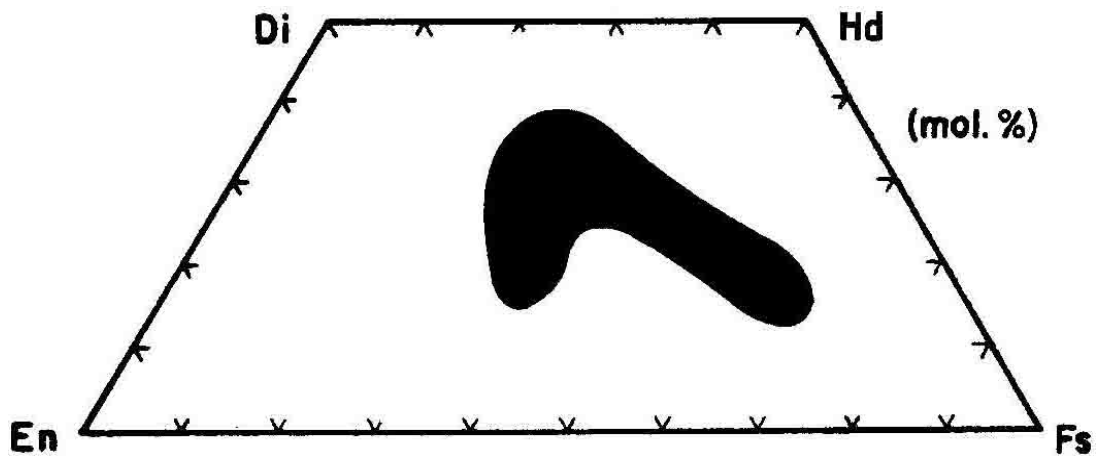


FIGURE 4. Pyroxene compositions of KREEP basalt clast, from Steele and Smith (1973).