77517

Unique Fragmental Breccia

45.6 grams

Figure 1: Photo of 77517. S73-19408. Each piece is about 2 cm.

Introduction

77517 is a fragmental breccia with aphanitic matrix. It is light-colored and appears unique. Sample 77517 may be exotic to the Apollo 17 site because it contains mineral fragments of pink aluminous spinel, aluminous enstatite and foresterite – not normally components at Apollo 17.

This rock deserves to be taken apart clast by clast – but how do you do that?

Petrography

77517 has abundant mineral and lithic clasts in a highly porous, poorly sintered matrix (figure 3). The mineral fragments are loosely held in the fragmental matrix. Lithic clast include anorthosite, norite, troctolite and spinel cataclasite.

Mineral compositions are variable (figure 4). Pink spinel grains up to 400 microns are reported.

Significant clasts

Spinel Cataclasite: Warner et al. (1978) and Baker and Herzberg (1980) report on a clast assemblage – aluminous enstatite + foresterite + plagioclase + aluminous spinel).

Chemistry

None

Processing

77517 was returned in three pieces in a bag with other rocks and additional fragments (77510 - 4). There are 7 thin sections.

References for 77517

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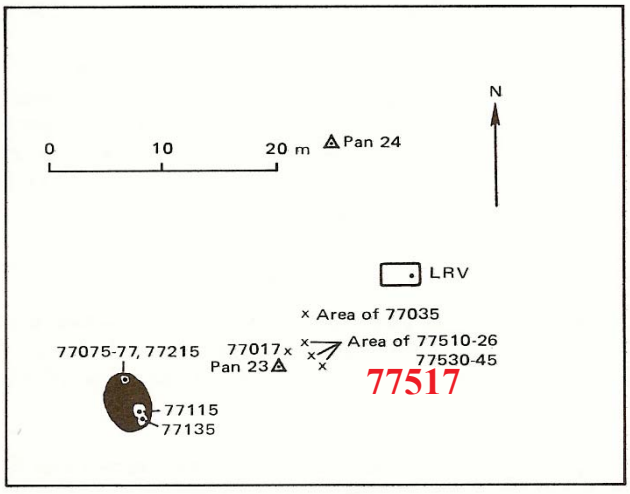

Figure 2: Map of station 7, Apollo 17.

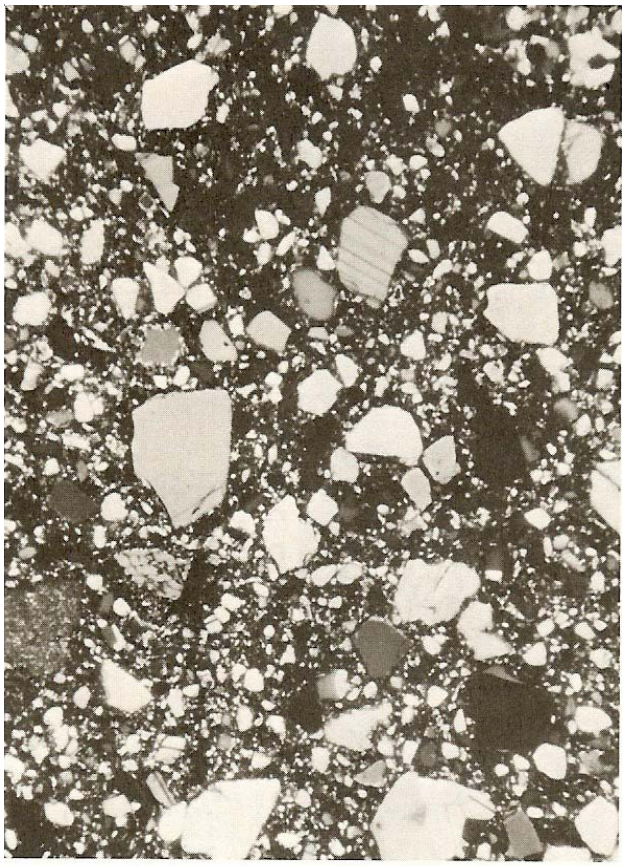

Figure 3: Photomicrograph of thin section of 77517.

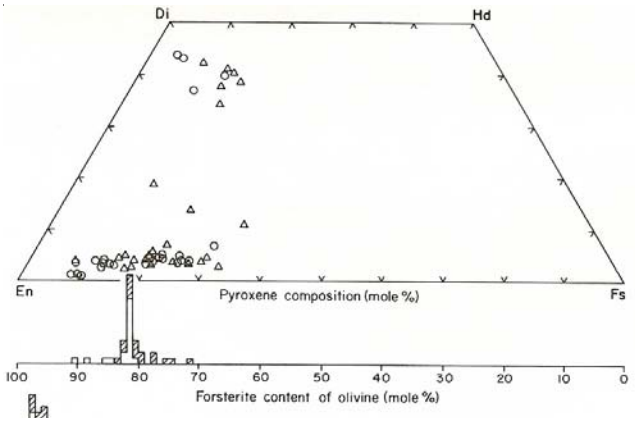

Figure 4: Composition of olivine and pyroxene in 77517 (Warner et al. 1977).

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