

64816
Poikilitic Impact Melt
3.83 grams



Figure 1: Photo of 64816. Sample is 1.7 cm. S72-55328

Introduction

64816 is a rake sample collected from the rim of a small crater at station 4 on Stone Mountain – see section on 64801. It is a holocrystalline poikilitic impact melt with a crystallization age of 3.85 b.y.

Petrography

Simonds et al. (1973) included 64816 in their report on poikilitic Apollo 16 samples (now known as impact melts). Pigeonite oikocrysts include olivine and plagioclase chadocrysts. Ilmenite is concentrated between pyroxene oikocrysts and patches of interstitial liquid found in interstitial regions have subophitic texture (figure 2). Gooley et al. (1973) reported metallic nickel-iron grains. Hunter and Taylor (1981) verified that these were rust free.

Pyroxene: The composition of mafic minerals is slightly more Mg-rich than most Apollo 16 poikilitic impact melts (figure 3).

Plagioclase: Plagioclase in 64816 has a wide range of composition (An_{80-98}).

Mineralogical Mode

From Simonds et al. 1973	
Plagioclase	59 %
Pyroxene	34
Olivine	4
Opaque	2

Chemistry

Not reported

Radiogenic age dating

Norman et al. (2006) determined an age of 3.85 ± 0.01 b.y. for 64816 by the Ar/Ar plateau technique (figure 4).

Other Studies

Pearce and Simonds (1974) studied the magnetic properties.

Processing

There is only one thin section of 64816.

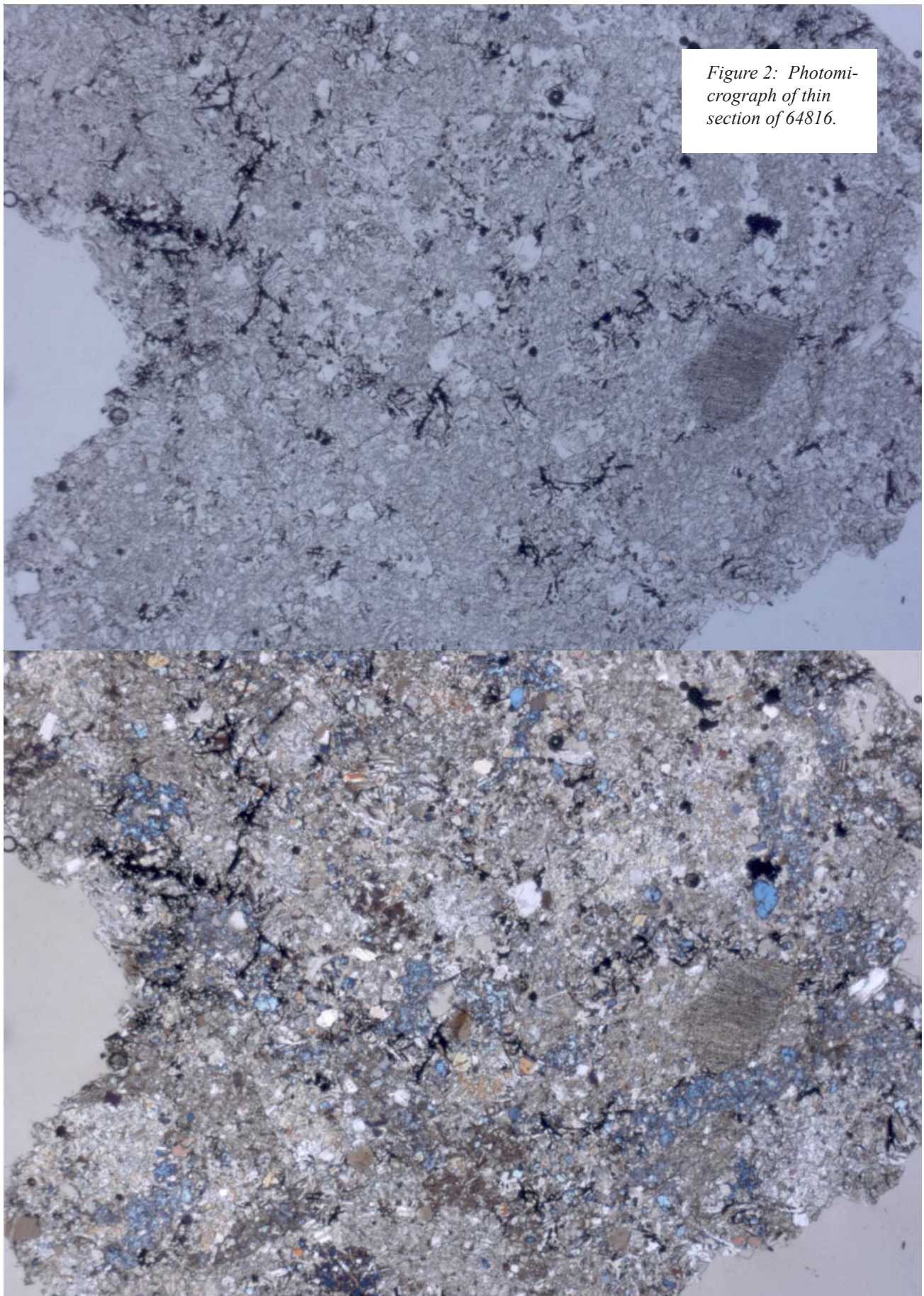


Figure 2: Photomicrograph of thin section of 64816.

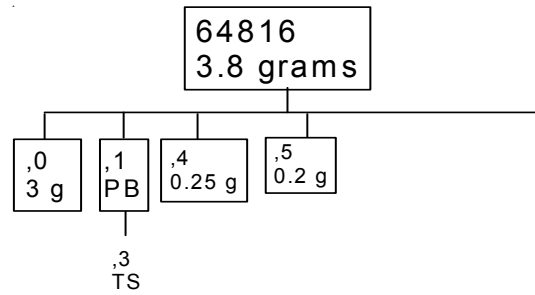
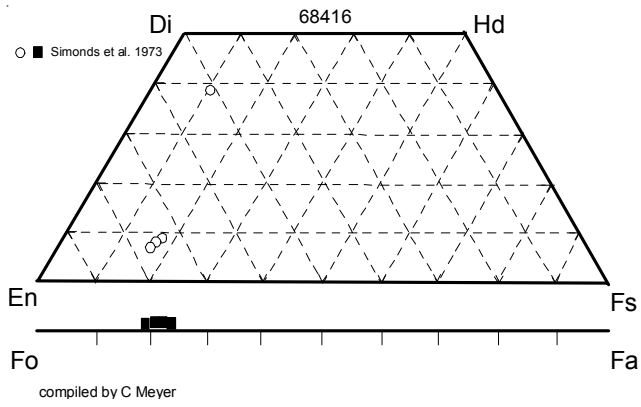


Figure 3: Composition of olivine and pyroxene in 64816.

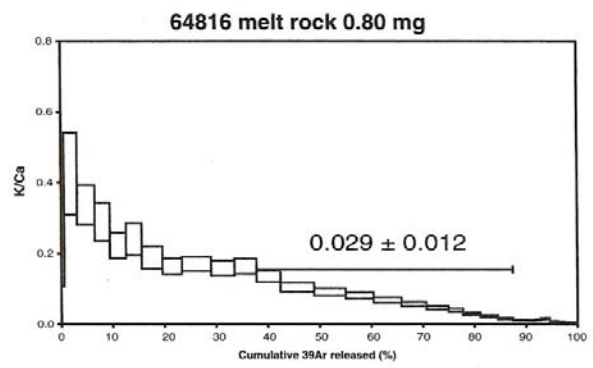
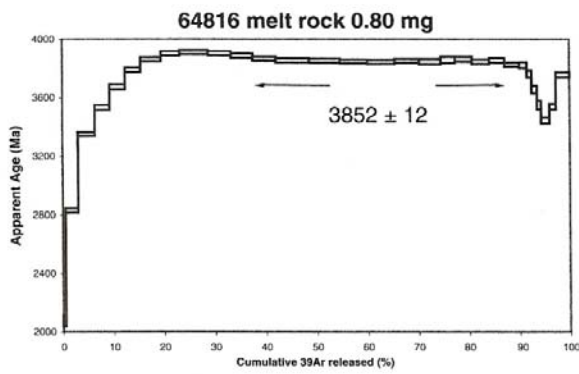


Figure 4: Ar/Ar plateau diagram for 84516 (Norman et al. 2006).

References for 64816

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