

60115
Polymict Breccia
132.5 grams



Figure 1: Photo of 60115 and 1 cm cube. S72-40397.

Introduction

60015 is a complex, polymict breccias with a glass matrix and many small clasts. One side has a thick patina (figure 1).

60115 was collected near the LM. It has not been studied.

Petrography

Warner et al. (1973) termed 60115 a “black and white breccia” with light matrix. Ryder and Norman (1980) found that it was clast-rich with distinct clast boundaries: “*Relics of shocked anorthosite, grading into swirly glass, are abundant.*” Glass penetrates dark clasts, aphanitic impact melts are present, etc – it’s a real mess.

Hunter and Taylor (1981) reported trace rust and trace schreibersite.

Chemistry

The only analysis of 60115 is by Clark and Keith (1973) table 1.

Radiogenic age dating

None

Cosmogenic isotopes and exposure ages

Clark and Keith (1973) determined the cosmic-ray-induced activity of $^{22}\text{Na} = 44$ dpm/kg, $^{26}\text{Al} = 98$ dpm/kg, $^{46}\text{Sc} = 3$ dpm/kg, $^{54}\text{Mn} = 25$ dpm/kg and $^{56}\text{Co} = 11$ dpm/kg.

Processing

There are three thin sections.

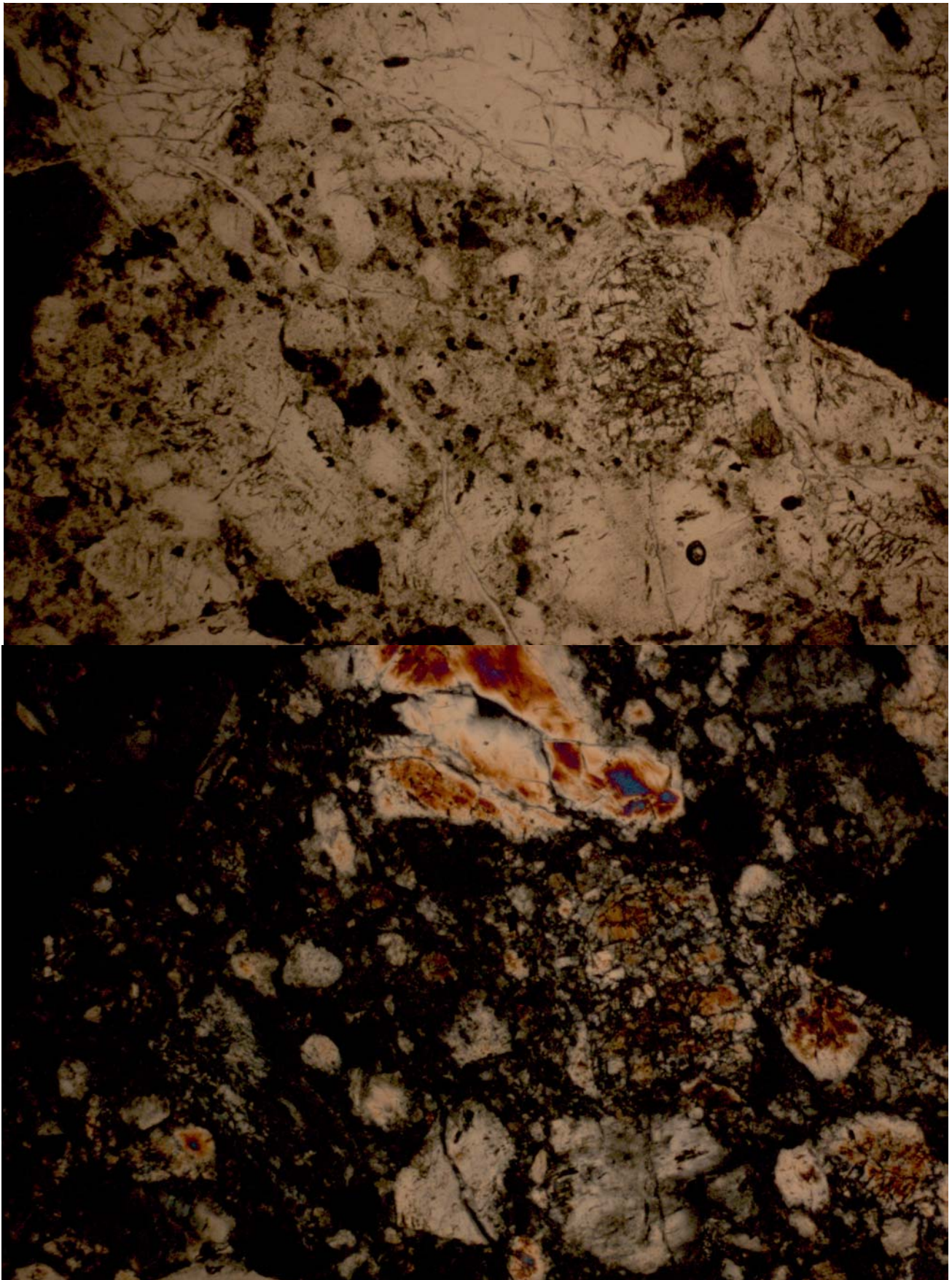


Figure 2: Photo of thin section 60115,9 by C Meyer. About 2 mm across.

Table 1. Chemical composition of 60115

reference	Clark73
weight	
SiO2 %	
TiO2	
Al2O3	
FeO	
MnO	
MgO	
CaO	
Na2O	
K2O	0.065 (a)
P2O5	
S %	
sum	

Sc ppm
V
Cr
Co
Ni
Cu
Zn
Ga
Ge ppb
As
Se
Rb
Sr
Y
Zr
Nb
Mo
Ru
Rh
Pd ppb
Ag ppb
Cd ppb
In ppb
Sn ppb
Sb ppb
Te ppb
Cs ppm

Ba		
La		
Ce		
Pr		
Nd		
Sm		
Eu		
Gd		
Tb		
Dy		
Ho		
Er		
Tm		
Yb		
Lu		
Hf		
Ta		
W ppb		
Re ppb		
Os ppb		
Ir ppb		
Pt ppb		
Au ppb		
Th ppm	1.46	(a)
U ppm	0.35	(a)

technique: (a) radiation counting

References for 60115

Butler P. (1972a) Lunar Sample Information Catalog Apollo 16. Lunar Receiving Laboratory. MSC 03210 Curator's Catalog. pp. 370.

Clark R.S. and Keith J.E. (1973) Determination of natural and cosmic ray induced radionuclides in Apollo 16 lunar samples. *Proc. 4th Lunar Sci. Conf.* 2105-2113.

Hunter R.H. and Taylor L.A. (1981) Rust and schreibersite in Apollo 16 highland rocks: Manifestations of volatile-element mobility. *Proc. 12th Lunar Planet. Sci. Conf.* 253-259.

LSPET (1973b) The Apollo 16 lunar samples: Petrographic and chemical description. *Science* **179**, 23-34.

LSPET (1972c) Preliminary examination of lunar samples. *In* Apollo 16 Preliminary Science Report. NASA SP-315, 7-1—7-58.

Ryder G. and Norman M.D. (1980) Catalog of Apollo 16 rocks (3 vol.). Curator's Office pub. #52, JSC #16904

Sutton R.L. (1981) Documentation of Apollo 16 samples. *In* Geology of the Apollo 16 area, central lunar highlands. (Ulrich et al.) U.S.G.S. Prof. Paper 1048.

Warner J.L., Simonds C.H. and Phinney W.C. (1973b) Apollo 16 rocks: Classification and petrogenetic

