

67647
Regolith Breccia
48 grams



Figure 1: Photo of 67647. Scale in mm. S80-34091

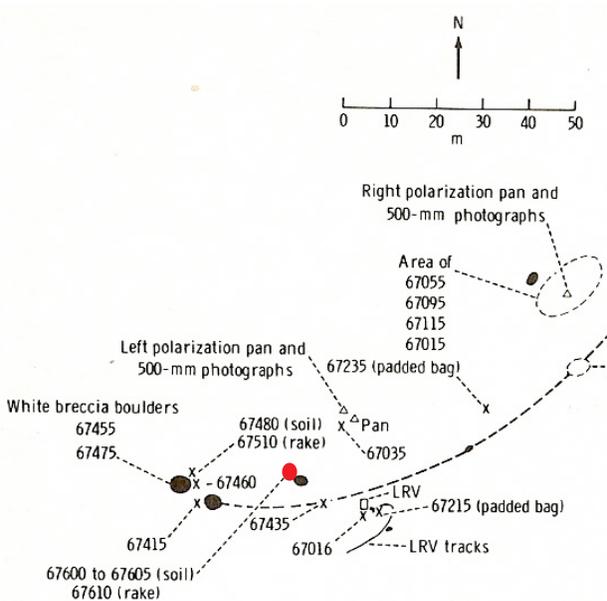


Figure 2: Map of NRC.

Introduction

67647 was collected as a rake sample from just inside the rim of North Ray Crater (NRC) – see section on 67601. It is relatively coherent with lots of zap pits (figure 1).

Petrography

67647 appears to be a highland regolith breccia with a low maturity index $I_s/FeO = 2$ (Jerde et al. 1987). However, it is broadly similar to other crushed white rocks on the rim of NRC. It has glass clasts, and glass in the matrix (figure 3).

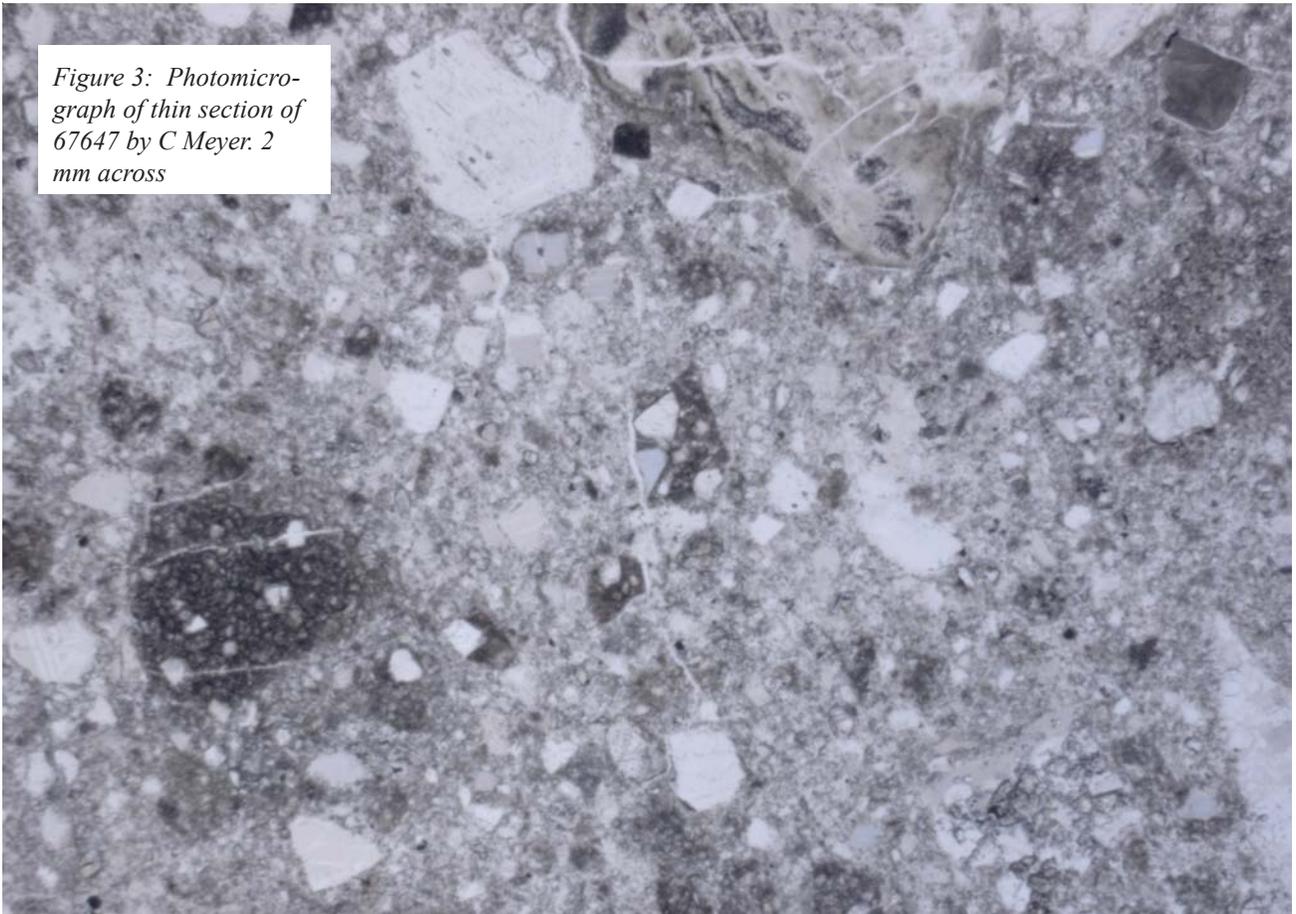
Chemistry

Jerde et al. (1987) found that 67647 was highly aluminous, with low trace element content, but relatively high Ir.

Processing

There is a thin section.

Figure 3: Photomicrograph of thin section of 67647 by C Meyer. 2 mm across



References for 67647

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

Jerde E.A., Warren P.H., Morris R.V., Heiken G.H. and Vaniman D.T. (1987) A potpourri of regolith breccias: "New" samples from the Apollo 14, 16 and 17 landing sites. *Proc. 17th Lunar Planet. Sci. Conf.* in *J. Geophys. Res.* 92, E526-E536.

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

Smith J.V. and Steele I.M. (1972c) Apollo 16 rake samples 67515 to 68537: Sample classification, description and inventory. Curator Catalog, JSC

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.

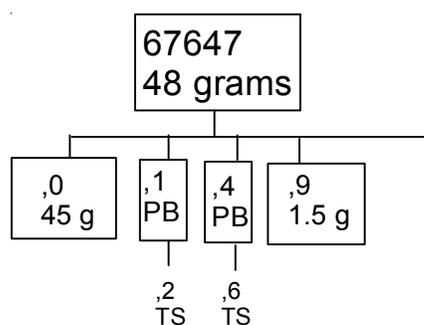


Table 1. Chemical composition of 67647

reference weight	Jerde87	
SiO ₂ %	44.5	(a)
TiO ₂	0.25	(a)
Al ₂ O ₃	30.2	(a)
FeO	2.38	(a)
MnO	0.035	(a)
MgO	3.18	(a)
CaO	17.6	(a)
Na ₂ O	0.515	(a)
K ₂ O	0.048	(a)
P ₂ O ₅		
S %		
sum		
Sc ppm	5	(a)
V		
Cr	310	(a)
Co	5.3	(a)
Ni	35	(a)
Cu		
Zn		
Ga	4.2	(a)
Ge ppb		
As		
Se		
Rb		
Sr	190	(a)
Y		
Zr		
Nb		
Mo		
Ru		
Rh		
Pd ppb		
Ag ppb		
Cd ppb		
In ppb		
Sn ppb		
Sb ppb		
Te ppb		
Cs ppm		
Ba	33	(a)
La	1.4	(a)
Ce	3.7	(a)
Pr		
Nd	2.4	(a)
Sm	0.69	(a)
Eu	1.07	(a)
Gd		
Tb	0.146	(a)
Dy		
Ho		
Er		
Tm		
Yb	0.57	(a)
Lu	0.094	(a)
Hf	0.44	(a)
Ta	0.055	(a)
W ppb		
Re ppb		
Os ppb		
Ir ppb	3	(a)
Pt ppb		
Au ppb		
Th ppm	0.23	(a)
U ppm	0.086	(a)
technique:	(a) INAA+RNAA	