

**61568**  
Impact Melt Breccia  
19.3 grams



*Figure 1: Photo of 61568. Scale marked in mm. S72-55350*

**Introduction**

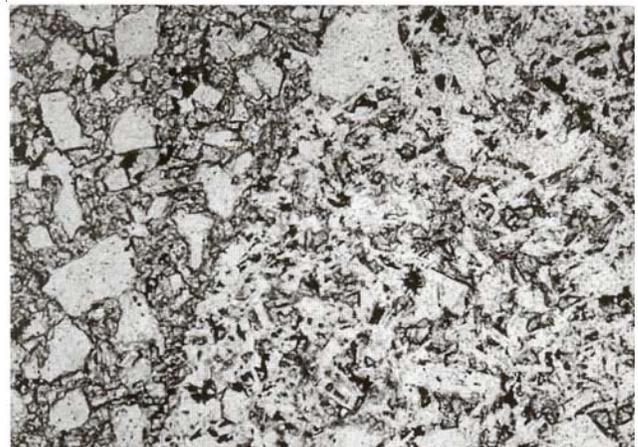
61568 is an impact melt breccia that was collected as a rake sample from near Plum Crater – see section on soil 61500. It has two distinct textures (basalt and poikilitic), separated by a sharp boundary.

**Petrography**

Warner et al. (1973) studied the basaltic portion, while Simonds et al. (1973) reported on the poikilitic portion (figure 2). The pyroxenes are typical of basalt (figure 3). Gooley et al. (1973) found about 5 % Ni in metallic iron grains. No rust

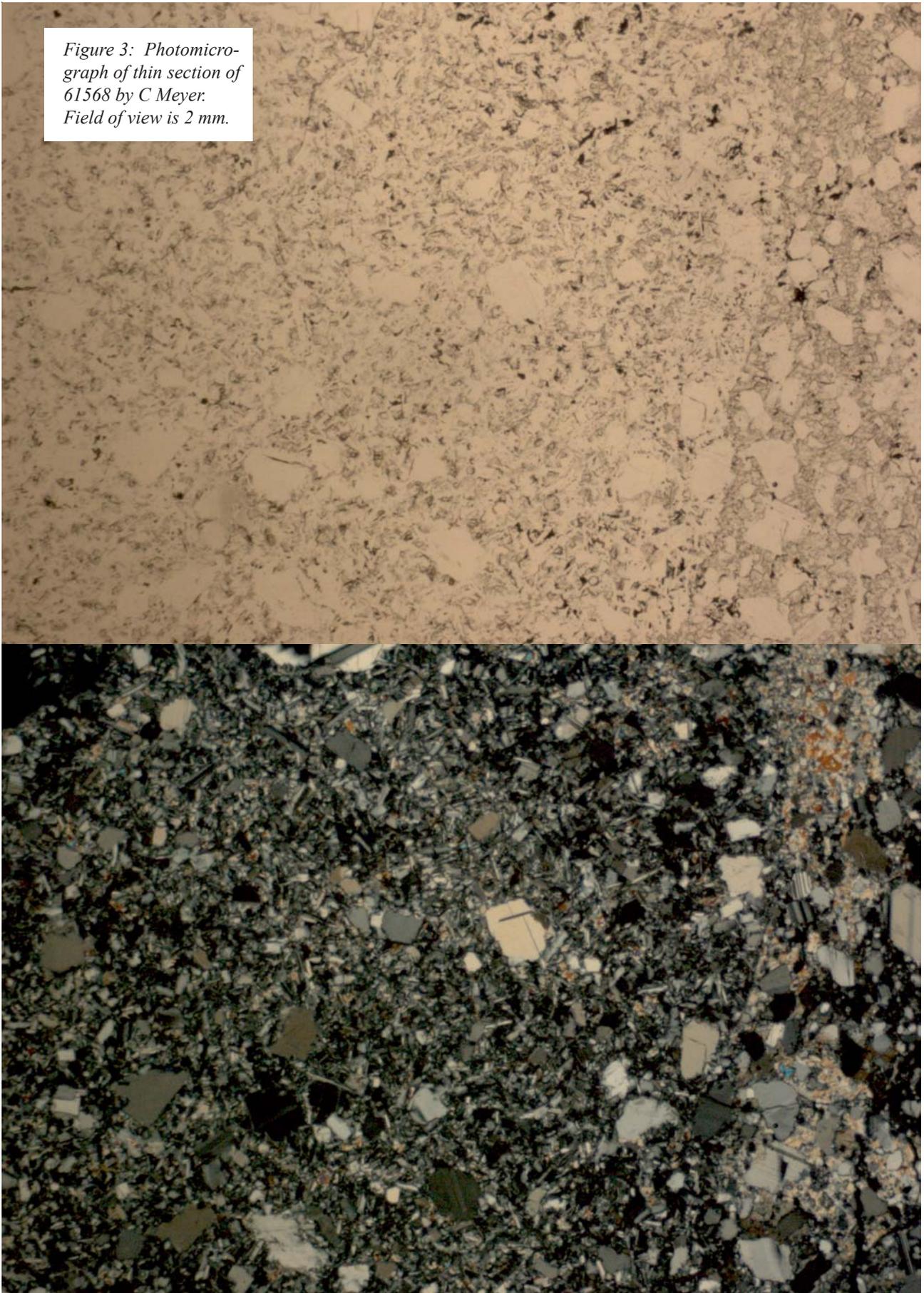
**Other Studies**

The magnetic properties of 61568 were reported by Pearce and Simonds (1976).



*Figure 2: Photomicrograph of 61568,4 showing sharp contact between two different lithologies.*

*Figure 3: Photomicrograph of thin section of 61568 by C Meyer. Field of view is 2 mm.*



**Table 1. Chemical composition of 61568.**

reference weight	Ryder82	
SiO2 %	44.8	(a)
TiO2		
Al2O3	27.8	(a)
FeO	3.9	(a)
MnO		
MgO	5.1	(a)
CaO	15.2	(a)
Na2O	0.51	(a)
K2O	0.24	
P2O5		
S %		
sum	4	
Sc ppm	7.7	(a)
V		
Cr		
Co	44	(a)
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	26.5	(a)
Ce		
Pr		
Nd		
Sm	12.3	(a)
Eu	1.4	(a)
Gd		
Tb		
Dy		
Ho		
Er		
Tm		
Yb		
Lu	1.3	(a)
Hf		
Ta		
W ppb		
Re ppb		
Os ppb		
Ir ppb		
Pt ppb		
Au ppb		
Th ppm		
U ppm		

technique: (a) preliminary data

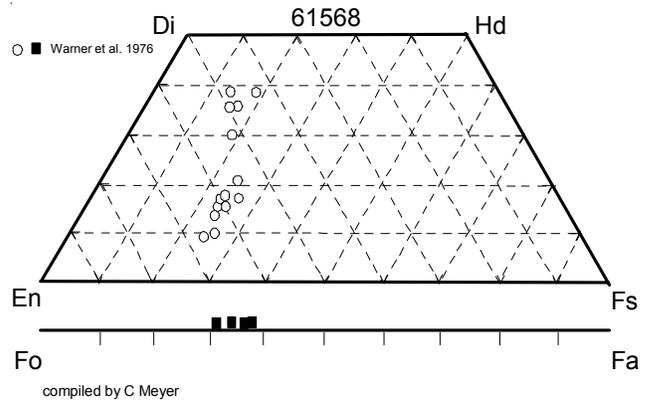
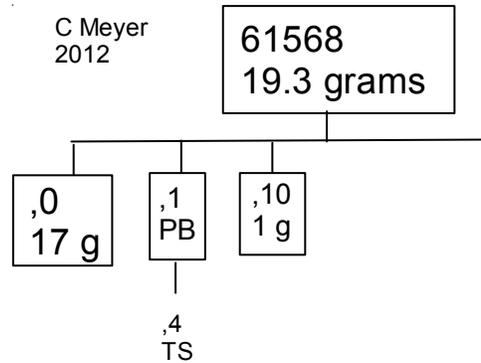


Figure 3: Olivine and pyroxene composition of basaltic portion of 61568 (Warner et al. 1973).



## References for 61568

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

Gooley R.C., Brett R. and Warner J.L. (1973) Crystallization history of metal particles in Apollo 16 rake samples. *Proc. 4<sup>th</sup> Lunar Sci. Conf.* 799-810.

Hunter R.H. and Taylor L.A. (1981) Rust and schreibersite in Apollo 16 highland rocks: Manifestations of volatile-element mobility. *Proc. 12<sup>th</sup> 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.

Pearce G.W. and Simonds C.H. (1974) Magnetic properties of Apollo 16 samples and implications for their mode of formation. *J. Geophys. Res.* **79**, 2953-2959.

Phinney W. and Lofgren G. (1973) Description, classification and inventory of Apollo 16 rake samples from stations 1, 4 and 13. Curators Office.

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

Ryder G. and Seymour R. (1982) Chemistry of Apollo 16 impact melts: Numerous melt sheets, lunar cratering history and the Cayley-Descartes distinction (abs). *Lunar Planet. Sci. XIII*, 673-674. Lunny Institute in Houston.

Simonds C.H., Warner J.L. and Phinney W.C. (1973) Petrology of Apollo 16 poikilitic rocks. *Proc. 4<sup>th</sup> Lunar Sci. Conf.* 613-632.

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 model. *Proc. 4<sup>th</sup> Lunar Sci. Conf.* 481-504.