

63585
Basaltic Impact Breccia
 32.6 grams



Figure 1: Photo of 63585 with 1 cm cube for scale. S72-43490

Introduction

63585 is an impact melt breccia with regions that have basaltic texture and other areas that are poikilitic. It was collected as a rake sample from station 13, on the flank of North Ray Crater, Apollo 16, and has numerous micrometeorite craters on the surface (figure 1).

Petrography

Warner et al. (1973) reported 63585 as a “basalt”, while von Engelhardt (1979) found it was a poikilitic impact breccia. So it has regions with both textures (figures 2 and 3). The analyses of mafic mineral in the basaltic region are reproduced in figure 4. Hunter and Taylor (1980) reported lots of rust in 63585.



Figure 2: Photomicrograph of thin section 63585,4. 3 mm across.

Compositional variation of Apollo 16 impact-melt rocks is discussed by Korotev (1994).

Chemistry

Stoffler et al. (1985) reported an analysis. It is rather aluminous. The chip sent to Rhodes for analysis was apparently not analysed.

Other Studies

Pearce and Simonds (1974) studied the magnetic properties.

Processing

There are 5 thin section of 63585 and several chips.

Table 1. Chemical composition of 63585

reference weight	Stoffler86	
SiO ₂ %	45	(a)
TiO ₂	0.84	(a)
Al ₂ O ₃	27.5	(a)
FeO	3.1	(a)
MnO	0.02	(a)
MgO	6.5	(a)
CaO	16.2	(a)
Na ₂ O	0.48	(a)
K ₂ O	0.23	(a)
P ₂ O ₅	0.14	(a)
S %		
sum		
	(a) broad beam e. probe	

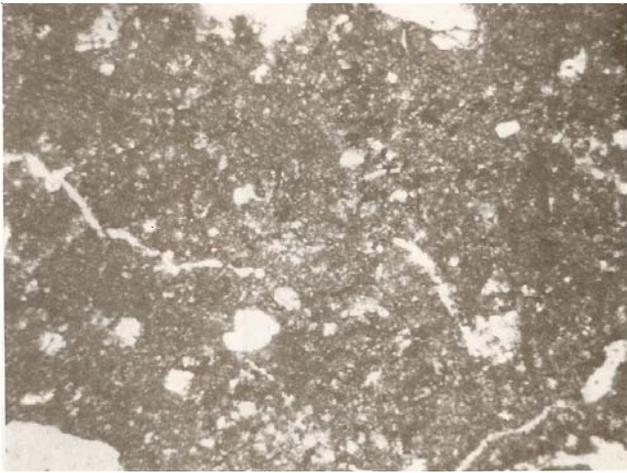


Figure 3: Photomicrograph of thin section 63585,10. 3 mm across.

References for 63585

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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

Stöffler D., Ostertag R., Reimold W.U., Borchardt R., Malley J. and Rehfeldt A. (1981) Distribution and provenance of lunar highland rock types at North Ray Crater, Apollo 16. *Proc. 12th Lunar Planet. Sci. Conf.* 185-207.

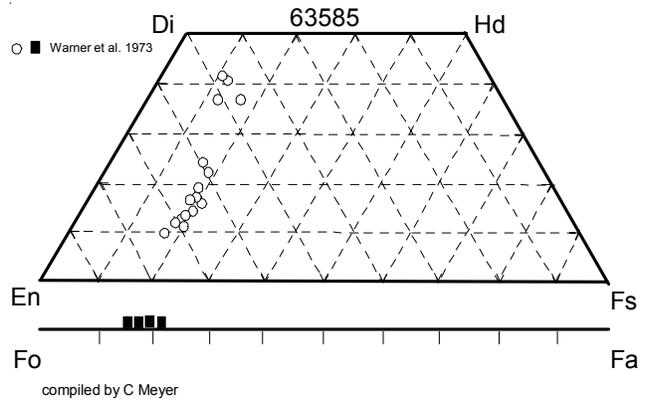
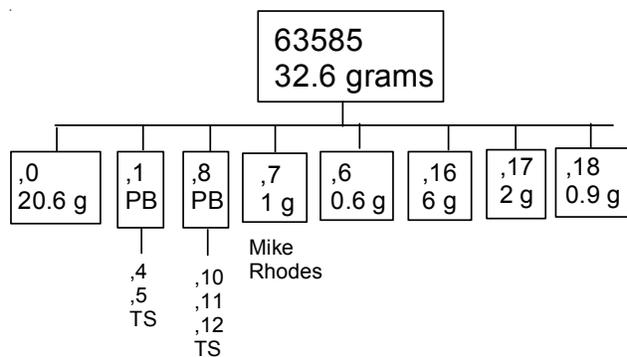


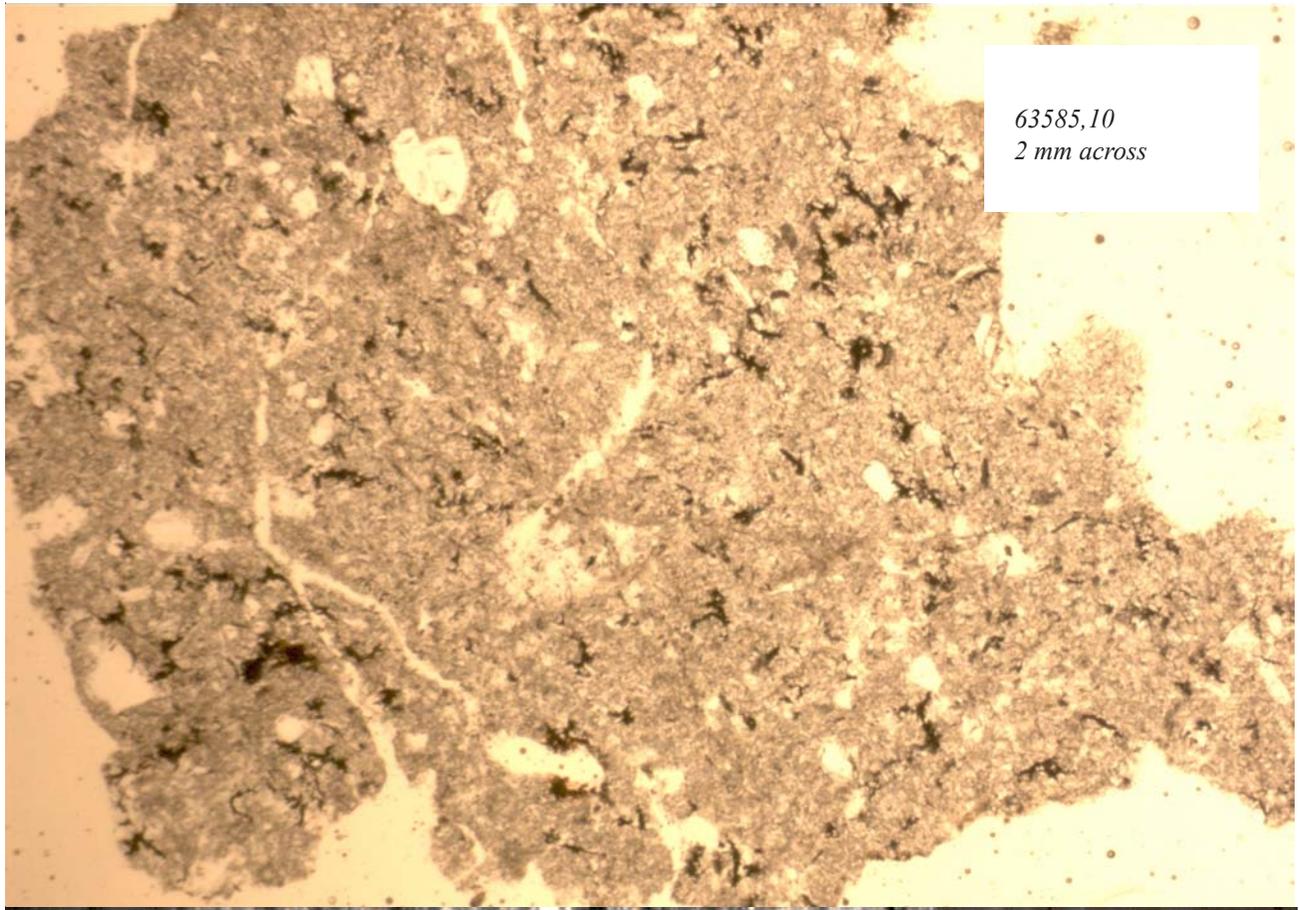
Figure 4: Composition of olivine and pyroxene in 63585 (adapted from Warner et al. 1973).

Stöffler D., Bischoff A., Borchardt R., Burgehele A., Deutsch A., Jessberger E.K., Ostertag R., Palme H., Spettel B., Reimold W.U., Wacker K. and Wanke H. (1985) Composition and evolution of the lunar crust in the Descartes highlands. *Proc. 15th Lunar Planet. Sci. Conf.* in *J. Geophys. Res.* **90**, C449-C506.

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. 4th Lunar Sci. Conf.* 481-504.





63585,10
2 mm across





Figure 5: Processing photo of 63585. Scale is in cm/mm. S91-38937