

65075
Impact Melt
108 grams

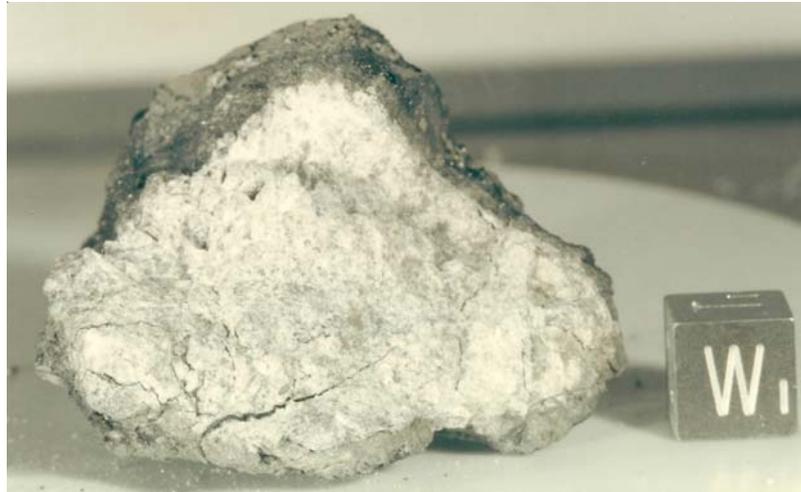


Figure 1: Photo of 65075,1. Cube is 1 cm. S72-39406

Introduction

Station 5 was at the transition between Stone Mountain and the Cayley Plains. 65075 was collected from the inner wall of a 20 m subdued crater relatively close to rake samples 65500 and 65900 – see sections on 65501 and 65901. It is a greenish gray breccias with a black glass coating. It is highly fractured and broke in pieces during return (figures 1 and 3).

Petrography

Grieve and Plant (1973) studied 65075 in some detail and this has been critically summarized by Ryder and Norman (1980). It seems clear that the crystalline interior is an impact melt rock with highland composition (~ 30 % Al_2O_3). It has relict ophitic, subophitic and poikilitic textures, but it has been highly shocked so that the clast matrix relationship is confused (figures 2 and 3). There is a great deal of glass. No pyroxene diagram has been published.

Hunter and Taylor (1981) reported lots of rust.

Mineralogical Mode

None reported



Figure 2: Thin section photomicrograph of 65075, 9 (from Grieve and Plant 1973).

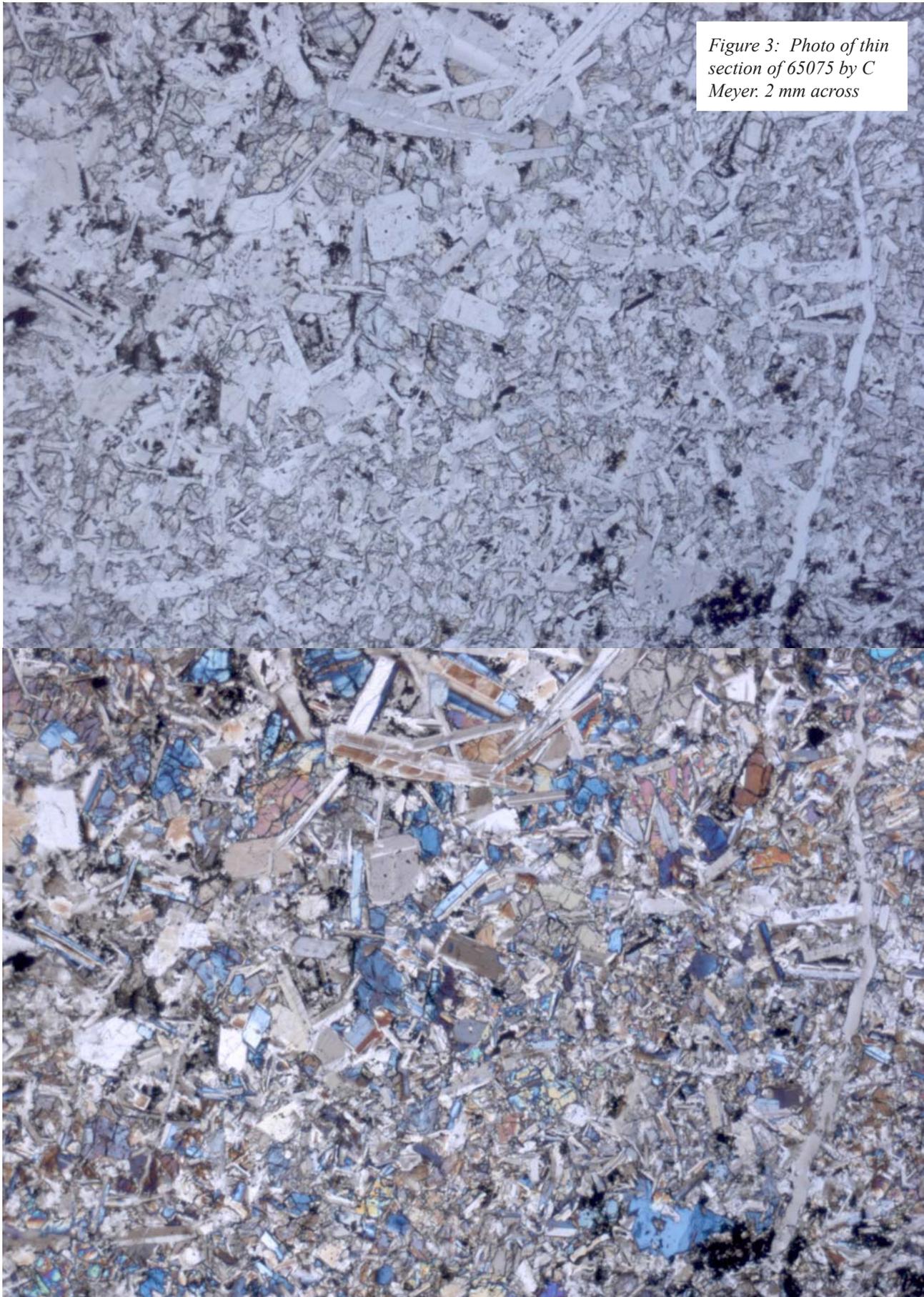


Figure 3: Photo of thin section of 65075 by C Meyer. 2 mm across

Table 1. Chemical composition of 65075

reference weight	glass		glass av.		anor. av.		anor	
	Morris 86	Rancitelli73	Grieve73				See86	
See 86		bulk						
SiO ₂ %	45.05	(c)		44.45	43.98	(d)	43.7	(c)
TiO ₂	0.23	(a)		0.33	0.23	(d)	0.05	(c)
Al ₂ O ₃	30	(c)		24.75	30.92	(d)	30.3	(c)
FeO	3.3	(a)		6.62	1.94	(d)	3.24	(c)
MnO		(a)		0.06	0.04	(d)	0.06	(c)
MgO	4.26	(c)		8.26	3.08	(d)	4.8	(c)
CaO	16.8	(a)		14.4	17.25	(d)	16.7	(c)
Na ₂ O	0.49	(a)		0.76	0.83	(d)	0.38	(c)
K ₂ O	0.06	(a)	0.193	(b)	0.08		0.12	(d)
P ₂ O ₅								(c)
S %								
sum								
Sc ppm	6.47	(a)						
V								
Cr	901	(a)						
Co	72	(a)						
Ni	1278	(a)						
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	197	(a)						
La	11.7	(a)						
Ce	28.3	(a)						
Pr								
Nd								
Sm	4.95	(a)						
Eu	1.05	(a)						
Gd								
Tb	1.03	(a)						
Dy								
Ho								
Er								
Tm								
Yb	3.45	(a)						
Lu	0.49	(a)						
Hf	3.56	(a)						
Ta	0.36	(a)						
W ppb								
Re ppb								
Os ppb								
Ir ppb								
Pt ppb								
Au ppb								
Th ppm	2.5	(a)	2.89	(b)				
U ppm	0.69	(a)	0.84	(b)				

technique: (a) INAA, (b) radiation count., (c) broad beam e probe, (d) averages of probe data

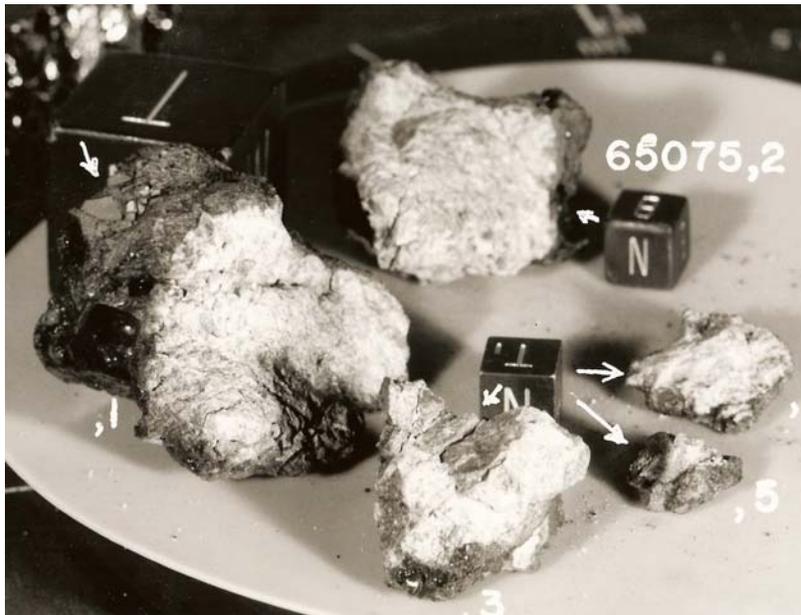
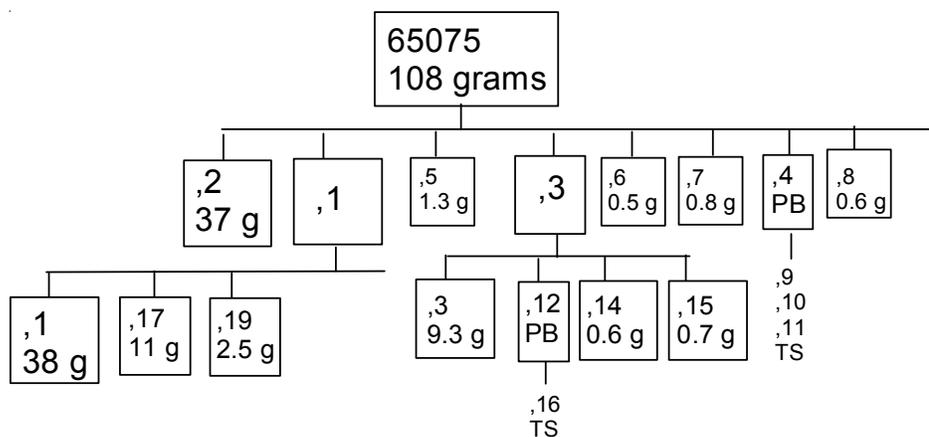


Figure 4: Processing photo of 65075. Cube is 1 cm. S72-44647



Mineralogy

Olivine: Fo₇₅

Plagioclase: An₉₅

Spinel: Pleonaste spinel has been reported

Chemistry

Rancitelli et al. (1973) provide a bulk analysis – but for only K, U, and Th. Grieve and Plant (1973) provide reliable major element analyses, but no trace element analyses. Morris et al. (1986) analyzed the glass coating for trace elements, but the glass may not be representative of the rock. So if someone wants to analyze something, please request a representative piece of the interior of this sample.

Cosmogenic isotopes and exposure ages

Rancitelli et al. (1973) determined the cosmic-ray-induced activity of ²²Na = 50 dpm/kg and ²⁶Al = 136 dpm/kg.

Processing

There are 4 thin sections of 65075. More are needed from a piece from the interior.

References for 65075

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