63566 – 19.6 grams
63575 – 4.72 grams
Glass with Anorthosite

Figure 1: Photo of 63566. Scale in cm/mm. S72-55395

Introduction

63566 and 63575 may be parts of the series 63559 – 63576. They are all rake samples with similar appearance from station 13, on the flank of North Ray Crater. These two small glass samples have relatively large white inclusions (figure 1 and 2).

Petrography

Warner et al. (1973) describe 63566 as "dendritic to spherulitic devitrified glass" and 63575 as "glass-cementing light clasts". Borchardt et al. (1986) discuss these fragments in terms of "glass bombs". The glass is devitrified where it is in contact with rock.

Chemistry

Stoffler et al. (1985), See et al. (1986), Morris et al. (1986) and Borchardt et al. (1986) determined the composition of the glass, while See et al. (1986) also give composition of the "anorthosite" inclusions (table 2).

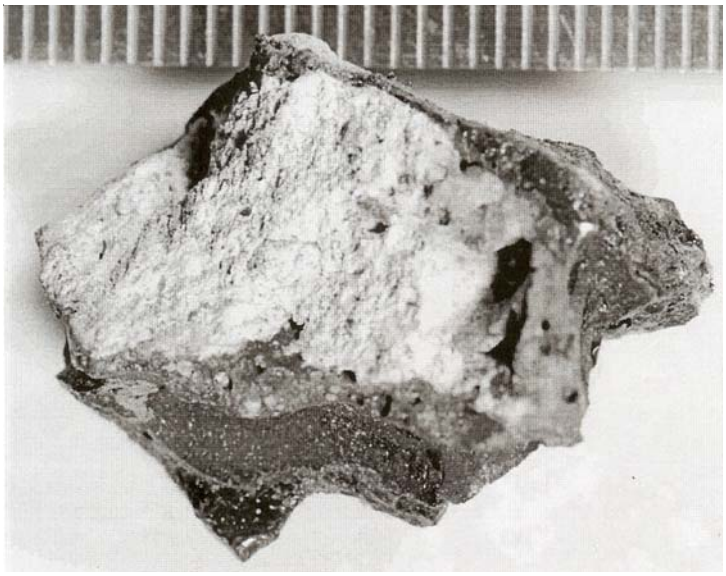

Figure 2: Photo of 63575. Scale in mm. S72-55384

Age?

Deutsch and Stoffler (1987) quote an age of 63566 of 2.16 ± 0.02 b.y. for 63566 *(details uncertain)*.

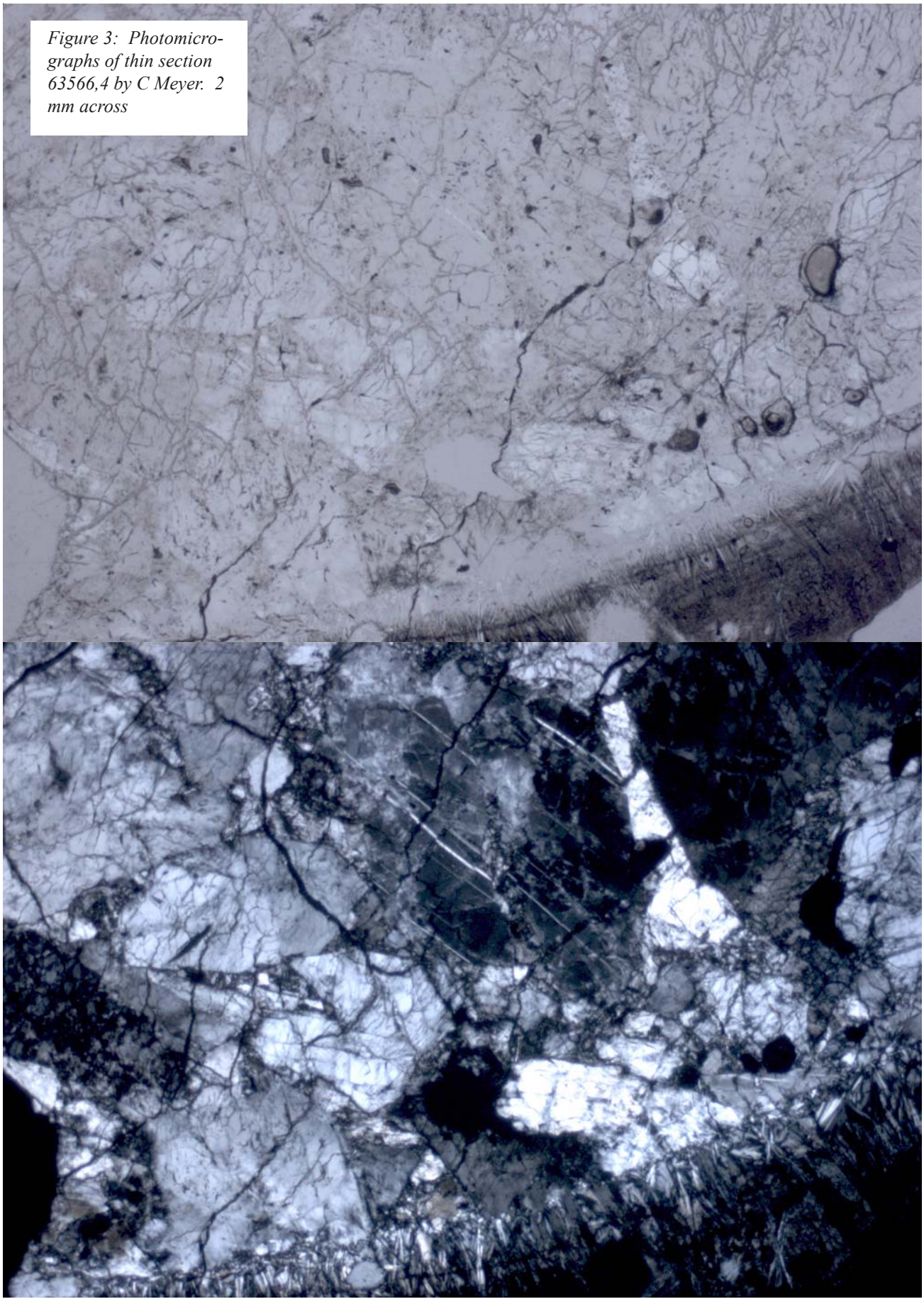

Figure 3: Photomicrographs of thin section 63566,4 by C Meyer. 2 mm across

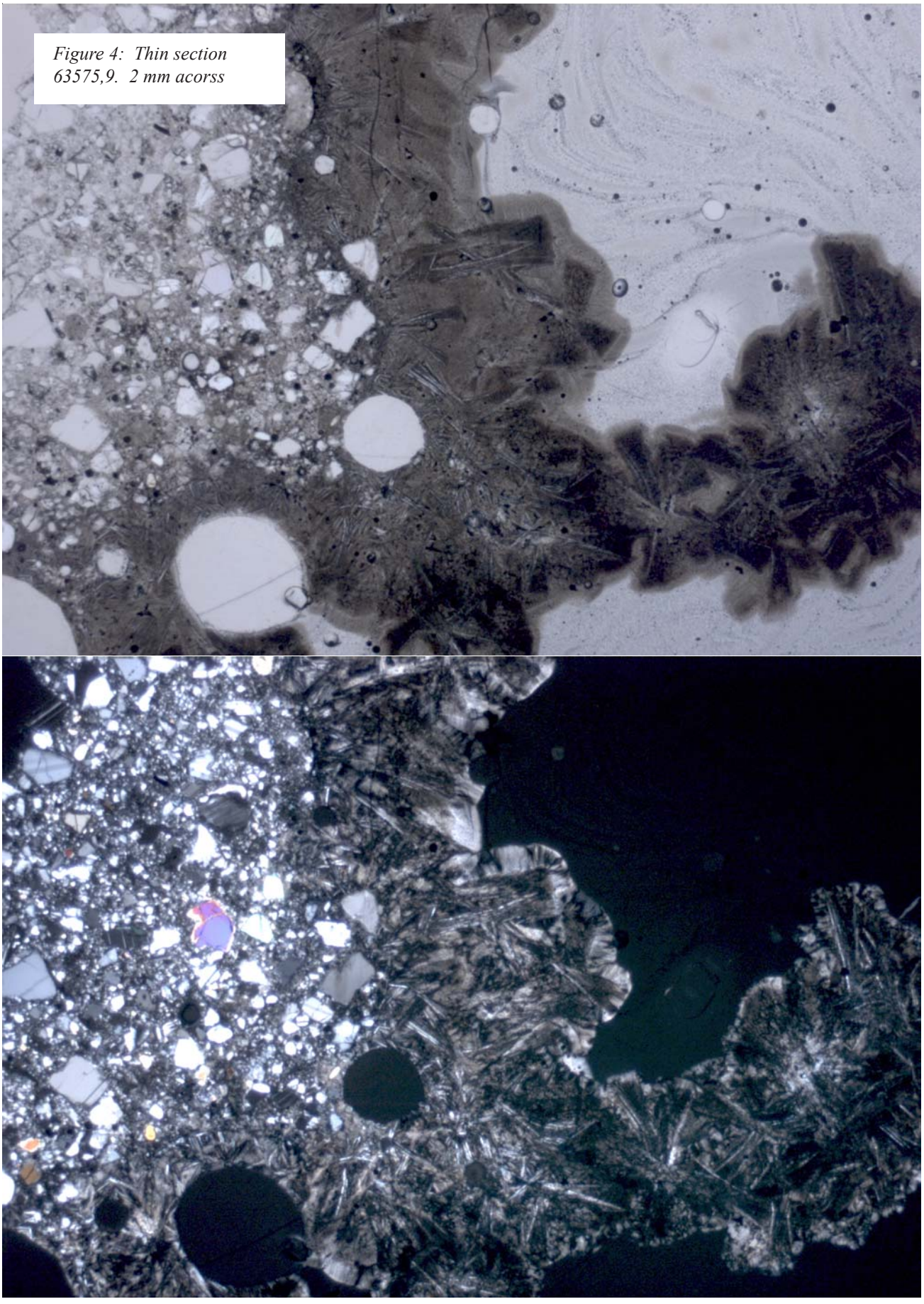

Figure 4: Thin section 63575,9. 2 mm acorss

Figure 5: Processing photo of 63566. Cube is 1 cm. S83-40675

Other Studies

Pearce and Simonds (1974) included 63575 in their study of magnetic properties of Apollo 16 walnuts.

Processing

There are two thin sections of each sample.

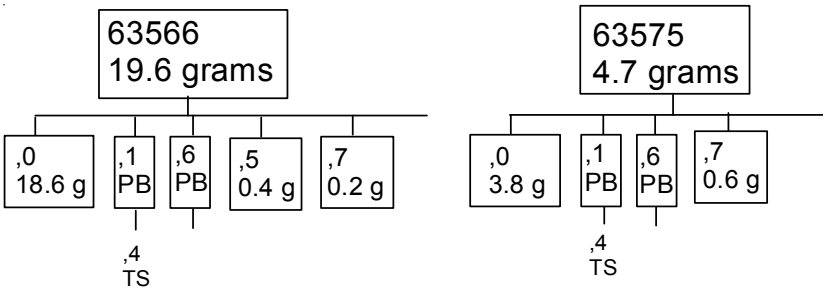

Table 1. Chemical composition of 63566 and 63575

	glass									anorthosite		
reference	Stoffler85		Borcherdt86		See86			Morris86			See86		
weight	Borcherdt86		63566		63566	63575		63566	63575		63566	63575	
SiO2 %	43.9	(a)			*45.13*	*44.8*	(c)	45.13	44.85	(b)	44.5	45.07	(a)
TiO2	0.44	(a)	0.55	(b)	*0.22*	*0.27*	(c)	0.22	0.27	(b)	0.01	0.03	(a)
Al2O3	27.9	(a)			*26*	*26.3*	(c)	29.2	26.26	(b)	35.3	34.29	(a)
FeO	5.2	(a)	5.93	(b)	*6*	*6.2*	(c)	4.67	6.2	(b)	0.15	0.64	(a)
MnO	0.1	(a)	0.07	(b)		*0.09*						0.02	
MgO	7.2	(a)			*7.3*	*7.41*	(c)	4.64	7.4	(b)	0.09	1.05	(a)
CaO	14.6	(a)	14.8	(b)	*14.5*	*14.7*	(c)	16.02	14.7	(b)	19.44	18.43	(a)
Na2O	0.58	(a)	0.52	(b)	*0.6*	*0.53*	(c)	0.57	0.53	(b)	0.42	0.66	(a)
K2O	0.1	(a)	0.13	(b)	*0.1*	*0.08*	(c)	0.06	0.08	(b)	0.01	0.04	(a)
P2O5	0.16	(a)											
S %													
sum													
Sc ppm			7.73	(b)				5.86	6	(b)			
V													
Cr			830	(b)				913	923	(b)			
Co			53	(b)				68	76	(b)			
Ni			990	(b)				1394	1276	(b)			
Cu													
Zn			15	(b)									
Ga			5.36	(b)									
Ge ppb													
As			0.18	(b)									
Se													
Rb			4.7	(b)									
Sr			200	(b)									
Y													
Zr			260	(b)									
Nb													
Mo													
Ru													
Rh													
Pd ppb													
Ag ppb													
Cd ppb													
In ppb													
Sn ppb													
Sb ppb													
Te ppb													
Cs ppm			0.27	(b)									
Ba			190	(b)				208	149	(b)			
La			19.2	(b)				10.37	8.54	(b)			
Ce			51.2	(b)				28.6	19	(b)			
Pr			7.1	(b)									
Nd			32.5	(b)									
Sm			8.45	(b)				4.87	3.8	(b)			
Eu			1.19	(b)				1.73	0.9	(b)			
Gd			10.5	(b)									
Tb			1.76	(b)				1.08	0.9	(b)			
Dy			11	(b)									
Ho			2.48	(b)									
Er			6.6	(b)									
Tm			0.97	(b)									
Yb			6.04	(b)				3.26	2.5	(b)			
Lu			0.8	(b)				0.46	0.4	(b)			
Hf			6.37	(b)				3.56	2.7	(b)			
Ta			0.74	(b)				0.52	0.4	(b)			
W ppb			0.5	(b)									
Re ppb													
Os ppb													
Ir ppb			30.5	(b)									
Pt ppb													
Au ppb			16.4	(b)									
Th ppm			2.72	(b)				2.17	2.44	(b)			
U ppm			0.78	(b)				0.76	0.69	(b)			

technique: (a) broad beam e. probe, (b) INAA+RNAA, (c) e. probe

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