63507

Regolith Breccia

2.8 grams

Figure 1: Photo of 63507. It is about 2 cm across. S81-32697

Introduction

63507 is a friable breccias with a light brown color. It is partially coated with black glass (figure 1).

Petrography

63507 is porous and has a seriate grain size distribution. It has numerous glass spheres and fragments including agglutinates. Lithic clasts include impact melts and granulites (figure 2)

McKay et al. (1986) and Joy et al. (2012) describe 63507 as an ancient regolith breccia, because it has excess ^{40}Ar. It has relatively high $I_s/FeO = 48$ and very high Ni, Ir and Au content.

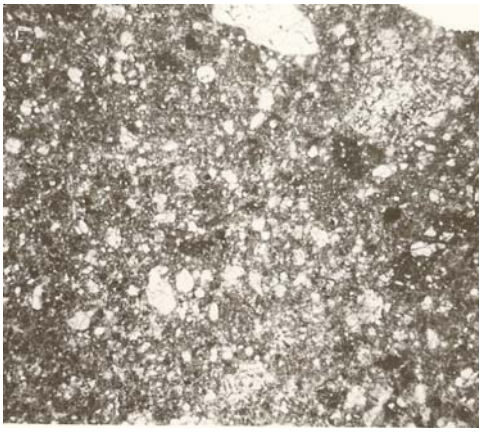

Figure 2: Thin section photo of 63507. Field of view is 3 mm.

Chemistry

McKay et al. (1986) reported the composition, which is like that of the local soil. The rare gas content and isotopic ratios were also determined by McKay et al.

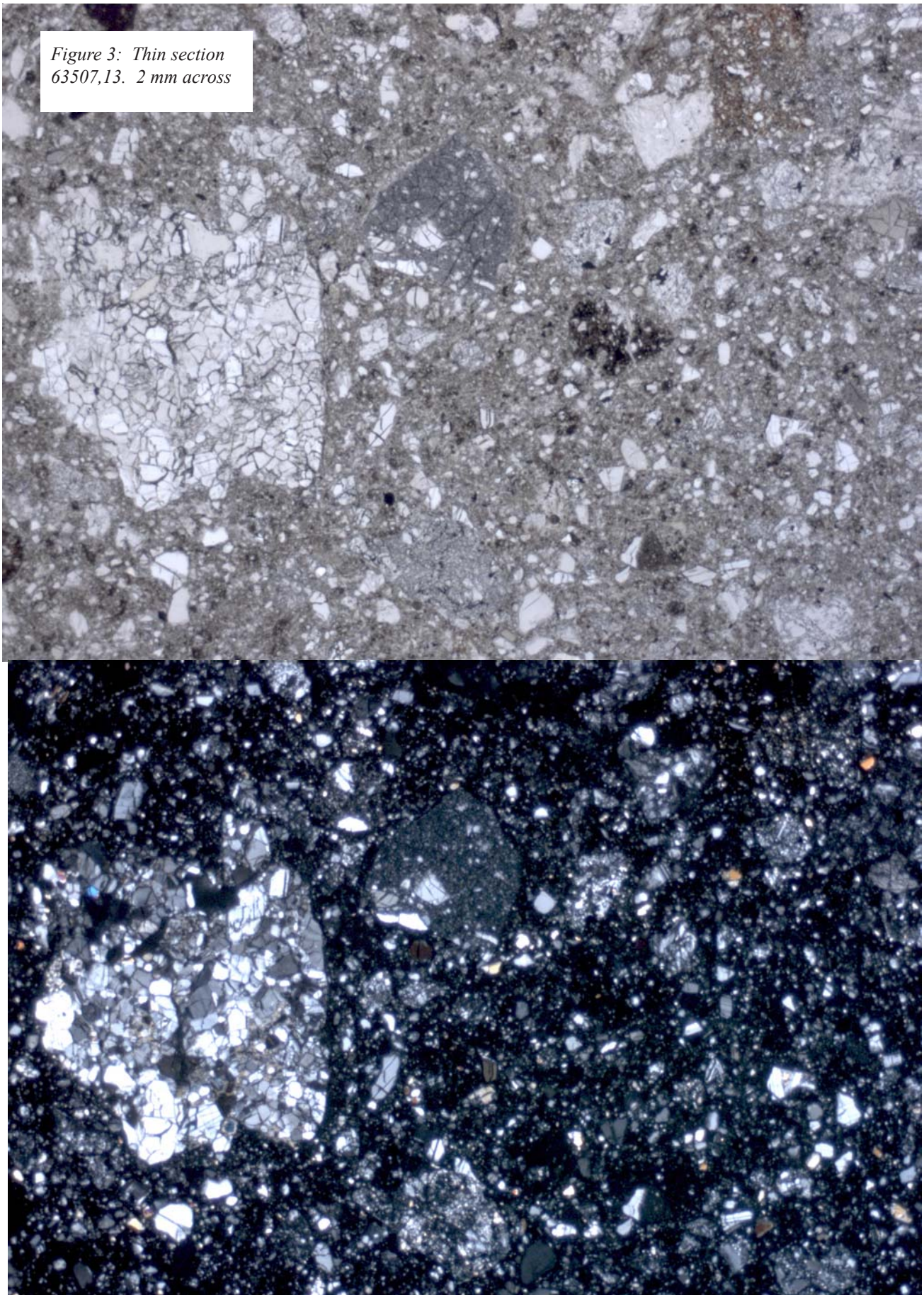

Figure 3: Thin section 63507,13. 2 mm across

Table 1. Chemical composition of 63507

reference	McKay86	
weight		
SiO2 %		
TiO2	0.66	(a)
Al2O3	24.8	(a)
FeO	6.42	(a)
MnO	0.07	(a)
MgO	7.1	(a)
CaO	15.1	(a)
Na2O	0.493	(a)
K2O		
P2O5		
S %		
sum		
Sc ppm	9.7	(a)
V	20	(a)
Cr	763	(a)
Co	72.4	(a)
Ni	1020	(a)
Cu		
Zn		
Ga		
Ge ppb		
As		
Se		
Rb		
Sr	201	(a)
Y		
Zr	140	(a)
Nb		
Mo		
Ru		
Rh		
Pd ppb		
Ag ppb		
Cd ppb		
In ppb		
Sn ppb		
Sb ppb		
Te ppb		
Cs ppm	0.14	(a)
Ba	146	(a)
La	12.7	(a)
Ce	32	(a)
Pr		
Nd	20	(a)
Sm	5.9	(a)
Eu	1.265	(a)
Gd		
Tb	1.09	(a)
Dy		
Ho		
Er		
Tm		
Yb	4.11	(a)
Lu	0.59	(a)
Hf	4.57	(a)
Ta	0.56	(a)
W ppb		
Re ppb		
Os ppb		
Ir ppb	51	(a)
Pt ppb		
Au ppb	17	(a)
Th ppm	2.28	(a)
U ppm	0.58	(a)
technique:	*(a) INAA*	

References for 63507

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