

71548 – 25.5 grams

71535 – 17.1 grams

Ilmenite Basalt



Figure 1: Photo of 71548. Scale in mm. S73-31811

Introduction

According to Warner et al. (1978), 71548 and 71535 are plagioclase-poikilitic ilmenite basalts similar to 71507 and 71508. Neal and Taylor (1993) found that they were medium coarse-grained with “nearly subophytic” texture (figures 4 and 5).

71525 - 71596 etc. are rake samples collected as part of a comprehensive sample at station 1, taken near Steno Crater, Apollo 17. They include numerous small ilmenite basalts.

Petrography

The pyroxene and olivine compositions of 71548 and 71535 are plotted in figure 3. Tranquilityite has been reported in both 71548 and 71535.

Chemistry

The chemical composition of 71548 and 71535 were reported by Murali et al. (1977).

Mineralogical Mode

	71548	71535
Olivine	1.7	0.6
Pyroxene	48.5	50.4
Plagioclase	29.6	29.1
Opaques	16.5	16.5
Silica	2.7	2.5
Meostasis	0.9	1

Processing

There is only one thin section of each sample.



Figure 2: Photo of 71535. S73-16228. About 2 cm across.

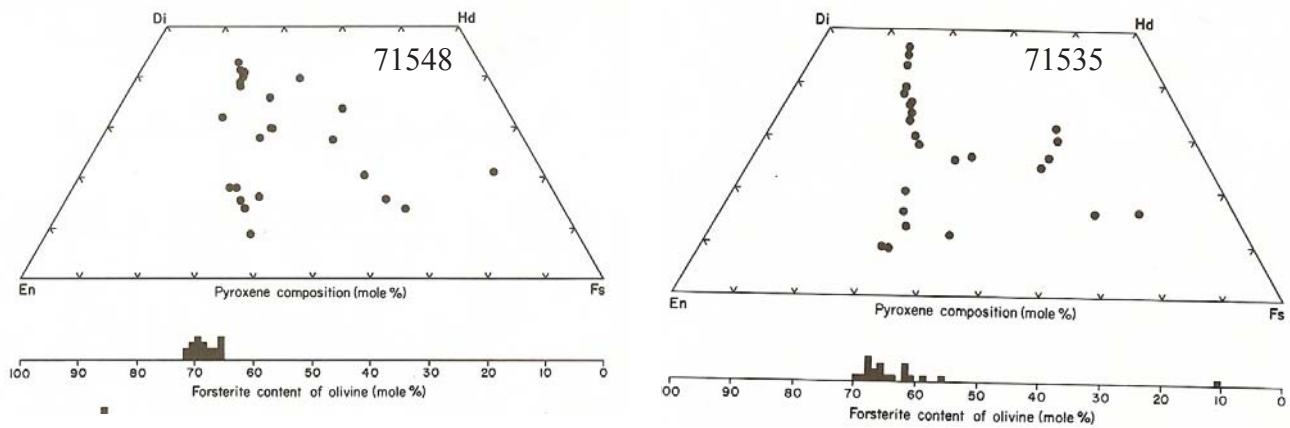


Figure 3: Pyroxene composition of 71548 and 71535 (Warner et al. 1978).

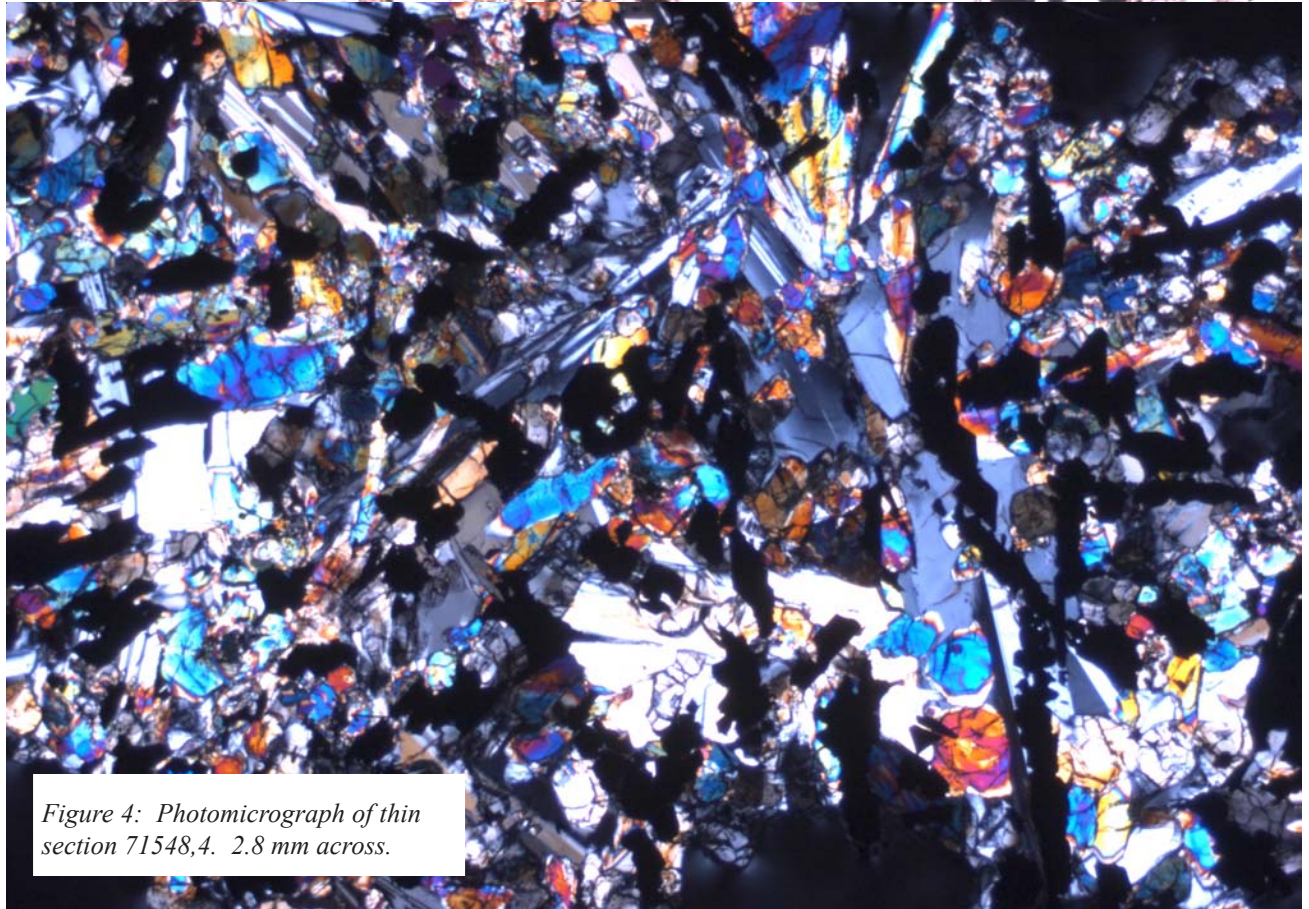
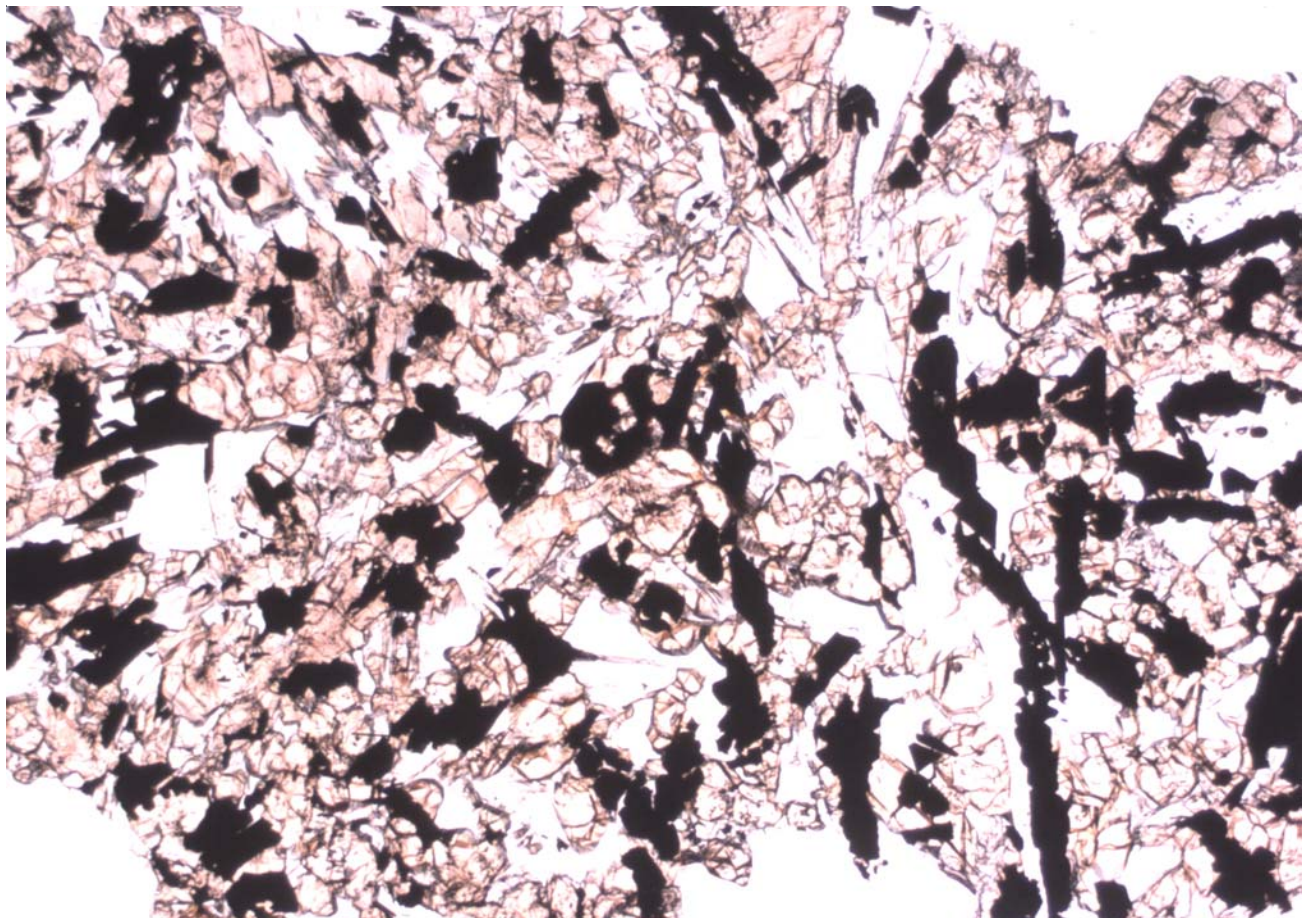
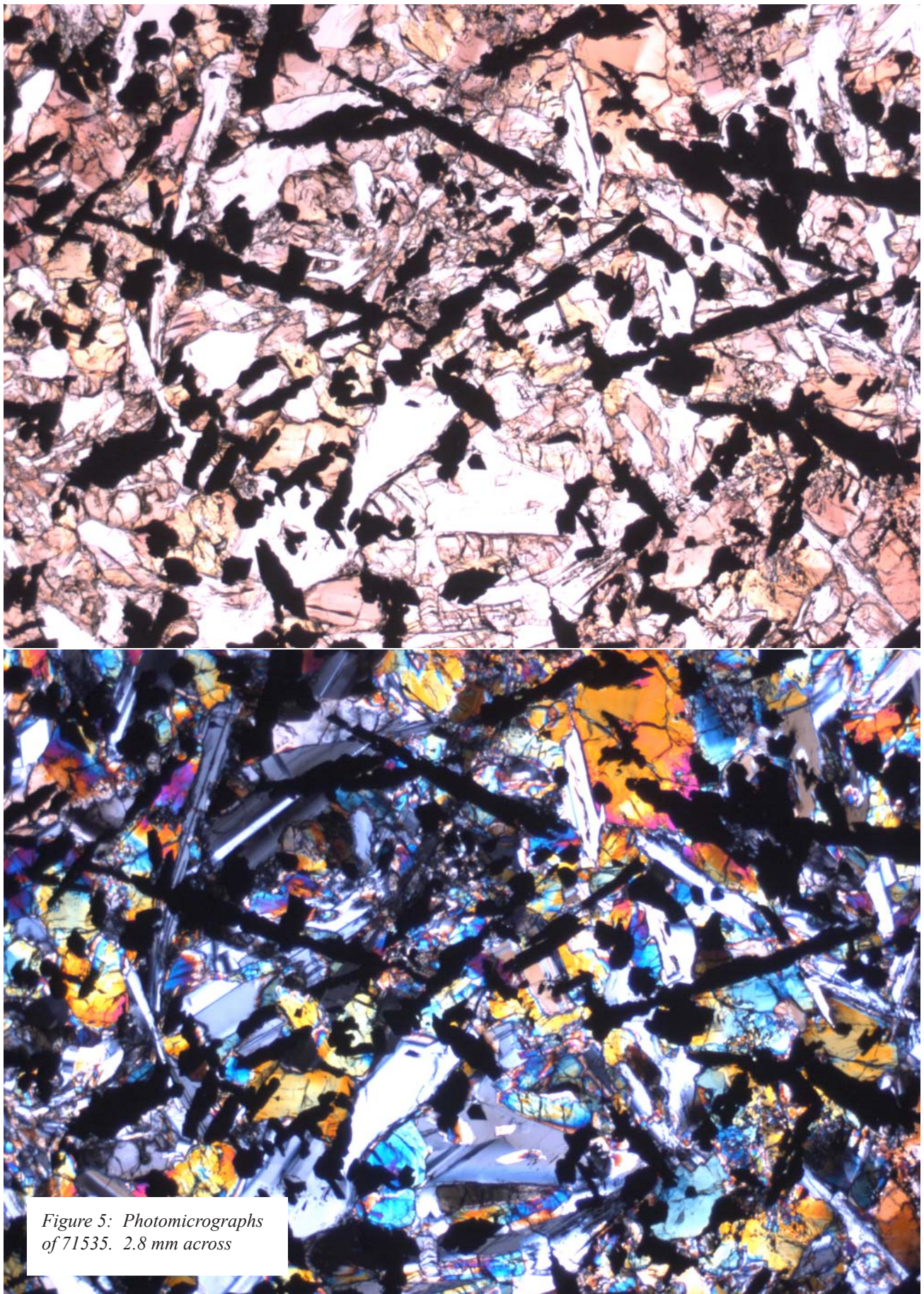


Figure 4: Photomicrograph of thin section 71548,4. 2.8 mm across.



*Figure 5: Photomicrographs
of 71535. 2.8 mm across*

Table 1. Chemical composition of 71548.

<i>reference weight</i>	Murali77	
SiO ₂ %		
TiO ₂	12.4	(a)
Al ₂ O ₃	8.7	(a)
FeO	19.6	(a)
MnO	0.24	(a)
MgO	8.5	(a)
CaO	9.3	(a)
Na ₂ O	0.41	(a)
K ₂ O	0.057	(a)
P ₂ O ₅		
S %		
<i>sum</i>		
Sc ppm	77	(a)
V	110	(a)
Cr	3113	(a)
Co	17	(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	6.5	(a)
Ce	38	(a)
Pr		
Nd		
Sm	9.9	(a)
Eu	2.02	(a)
Gd		
Tb	2.6	(a)
Dy		
Ho		
Er		
Tm		
Yb	9.4	(a)
Lu	1.43	(a)
Hf	9.8	(a)
Ta	1	(a)
W ppb		
Re ppb		
Os ppb		
Ir ppb		
Pt ppb		
Au ppb		
Th ppm		
U ppm		

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Table 2. Chemical composition of 71535.

<i>reference weight</i>	Murali77	
SiO ₂ %		
TiO ₂	11.7	(a)
Al ₂ O ₃	8.6	(a)
FeO	19.7	(a)
MnO	0.42	(a)
MgO	7.5	(a)
CaO	10.5	(a)
Na ₂ O	0.42	(a)
K ₂ O	0.054	(a)
P ₂ O ₅		
S %		
<i>sum</i>		
Sc ppm	80	(a)
V	90	(a)
Cr	2400	(a)
Co	19.5	(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	5.2	(a)
Ce	28	(a)
Pr		
Nd		
Sm	6.8	(a)
Eu	1.37	(a)
Gd		
Tb	1.7	(a)
Dy	11	(a)
Ho		
Er		
Tm		
Yb	6.7	(a)
Lu	0.92	(a)
Hf	5.8	(a)
Ta	1	(a)
W ppb		
Re ppb		
Os ppb		
Ir ppb		
Pt ppb		
Au ppb		
Th ppm		
U ppm		

technique: (a) INAA

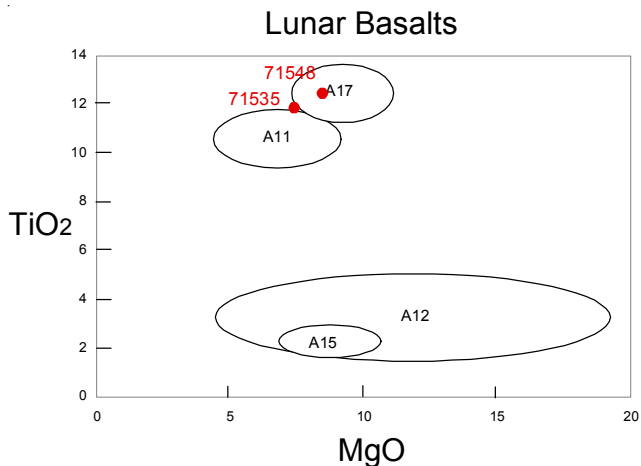
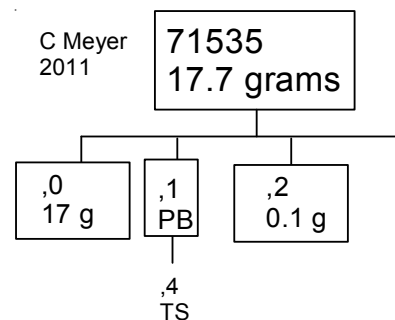
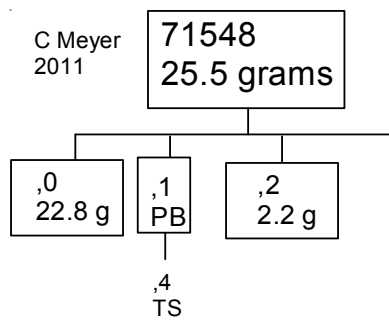


Figure 7: Composition of 71548 and 71535 compared with other Apollo basalt samples.

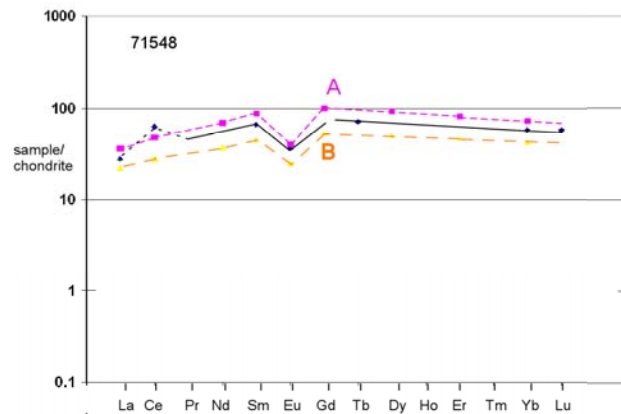


Figure 8: Normalized rare-earth-element diagram for 71548 and type A and B basalts.

References for 71548 and 71535

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