71595 – 25.2 grams
71576 – 23.5 grams
Ilmenite Basalt

Figure 1: Photo of 71595. Sample is 2 cm. S73-33406

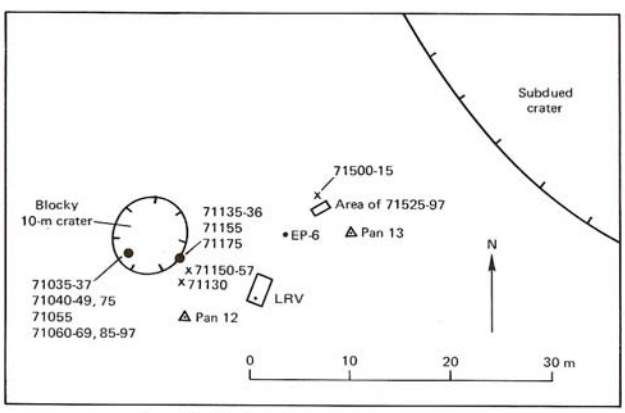


Figure 2: Map of station 1 showing location of rake samples.

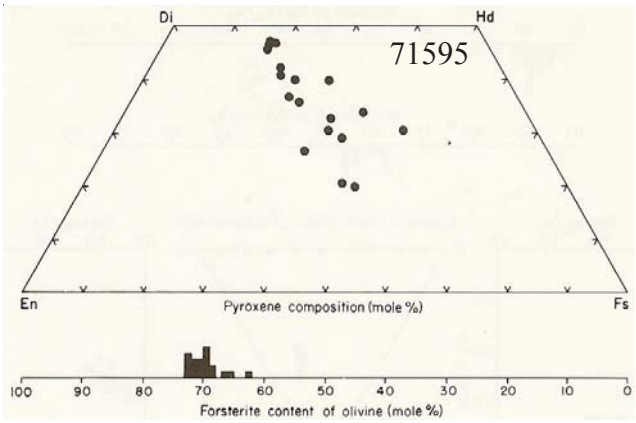
Mineralogical Mode

	71595	71576
Olivine	6.8	5.8
Pyroxene	44	43
Plagioclase	27.1	32.7
Opaques	17	16
Silica	4.6	1.4
Meostasis	0.6	0.8

Introduction

71595 is an olivine-microporphyritic ilmenite basalt similar to 71576 (Warner et al. 1978). It has been rounded by micrometeorite bombardment.

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.



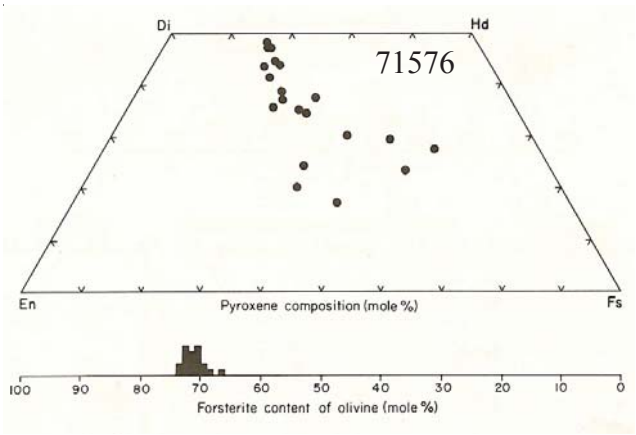


Figure 3: Pyroxene and olivine composition in 71595 and 71576 (Warner et al. 1978).

Petrography

71595 and 71576 are fine-grained basalts with skeletal olivine and ilmenite phenocrysts in a variolitic groundmass (figures 6 and 7). Armalcolite is present, mantled by ilmenite. Ca-rich pyroxene is zoned to Fe-rich (figure 3).

Chemistry

Murali et al. (1977) give the chemical composition of 30 small Apollo 17 basalts including 71595 and 71576 (figures 4 and 5). These samples have been classified as type B2 by Neal and Taylor (1993).

Radiogenic age dating

None

Processing

There is one thin section for each.

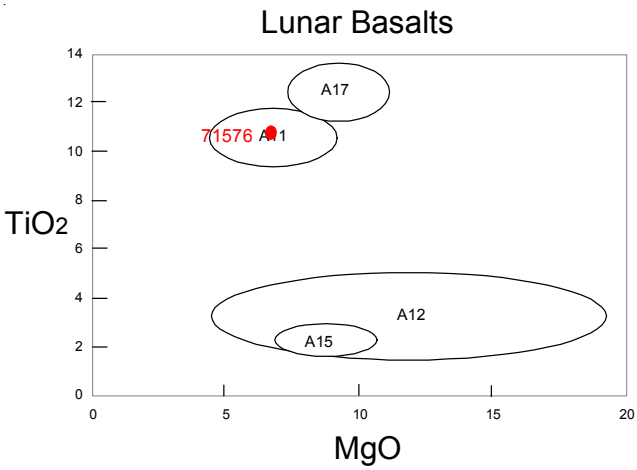


Figure 4: Compsition of 71595 compared with that of other lunar basalts.

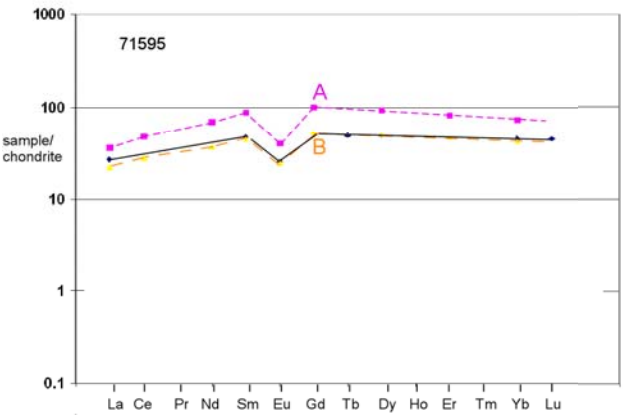


Figure 5: Normalized rare-earth-element diagram for 71595 and type A and B basalts.

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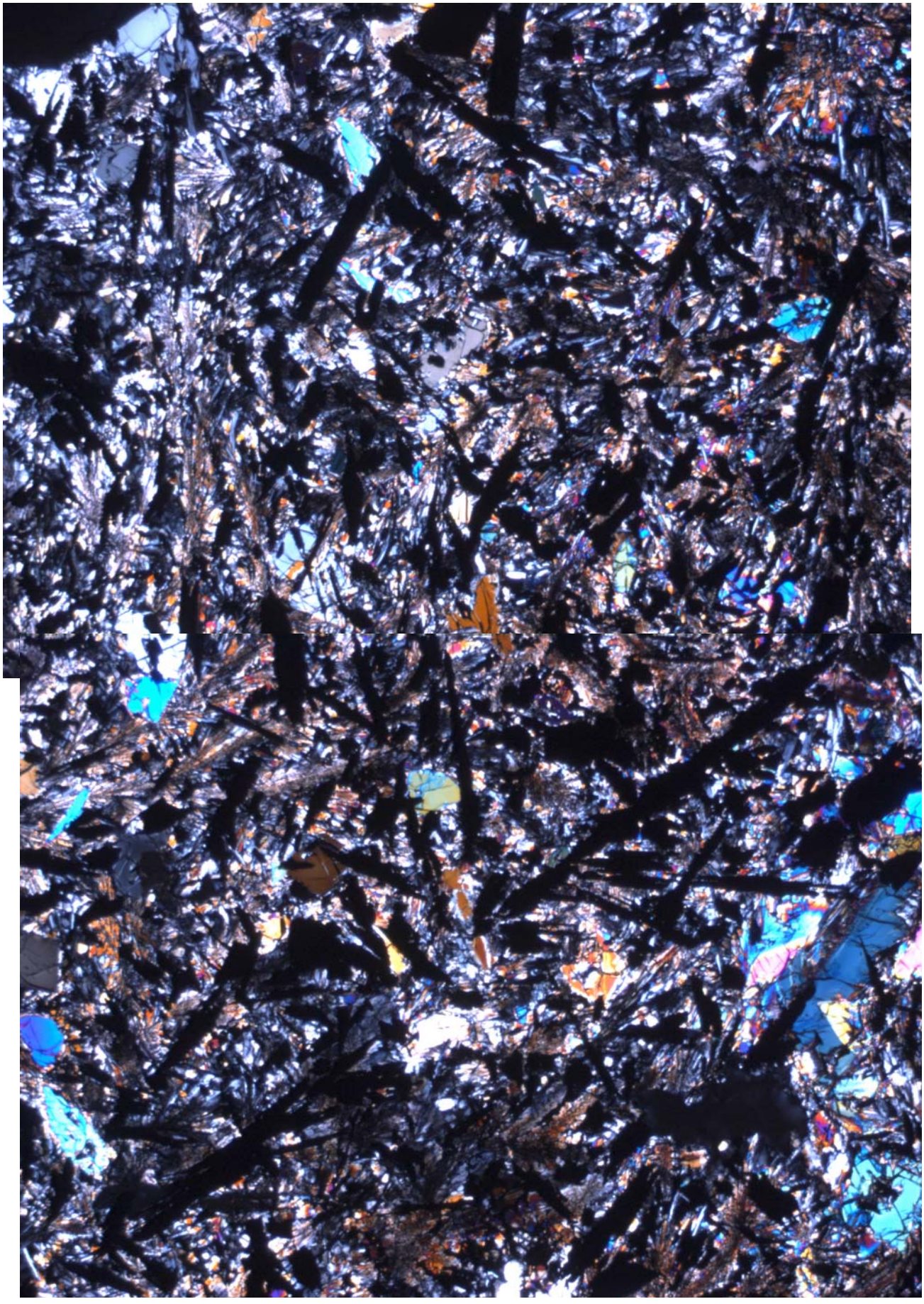
Figure 6: Photomicrograph of thin section 71595,5. 2.8 mm across



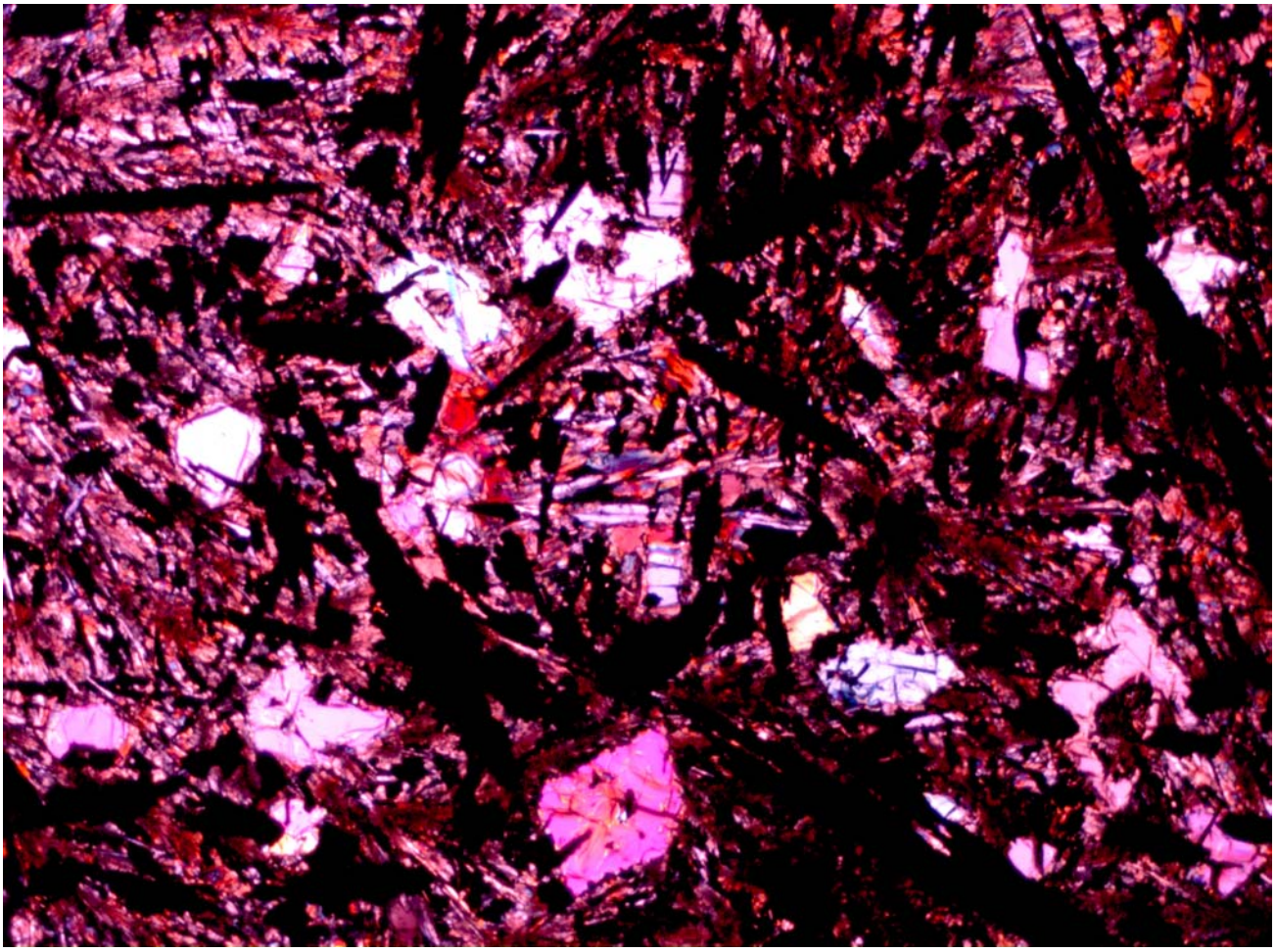
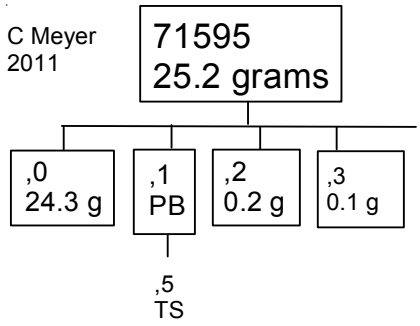


Figure 7: Photomicrograph of thin section 71576,3 (with quartz plate). 2.8 mm across.



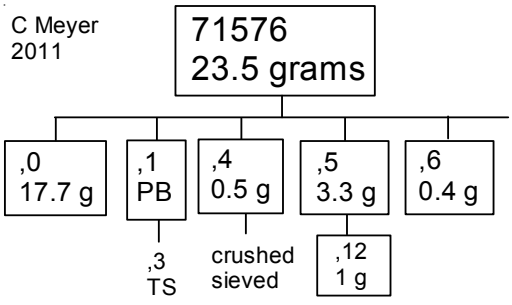


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Table 1. Chemical composition of 71595.

reference	Murali77	
weight		
SiO2 %		
TiO2	10.4	(a)
Al2O3	9.3	(a)
FeO	19.6	(a)
MnO	0.25	(a)
MgO	7.4	(a)
CaO	10.6	(a)
Na2O	0.39	(a)
K2O	0.044	(a)
P2O5		
S %		
sum		
Sc ppm	78	(a)
V	100	(a)
Cr	2846	(a)
Co	18	(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	6.4	(a)
Ce	29	(a)
Pr		
Nd		
Sm	6.9	(a)
Eu	1.43	(a)
Gd		
Tb	1.8	(a)
Dy	12	(a)
Ho		
Er		
Tm		
Yb	7.5	(a)
Lu	1.11	(a)
Hf	6.5	(a)
Ta	1.5	(a)
W ppb		
Re ppb		
Os ppb		
Ir ppb		
Pt ppb		
Au ppb		
Th ppm		
U ppm		
technique:	*(a) INAA*	

Table 2. Chemical composition of 71576.

reference	Murali77	
weight		
SiO2 %		
TiO2	11.8	(a)
Al2O3	8.9	(a)
FeO	20	(a)
MnO	0.242	(a)
MgO	6.8	(a)
CaO	10.6	(a)
Na2O	0.39	(a)
K2O	0.053	(a)
P2O5		
S %		
sum		
Sc ppm	80	(a)
V	85	(a)
Cr	2292	(a)
Co	19	(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	6.7	(a)
Ce	31	(a)
Pr		
Nd		
Sm	7.6	(a)
Eu	1.54	(a)
Gd		
Tb	1.8	(a)
Dy	12	(a)
Ho		
Er		
Tm		
Yb	8	(a)
Lu	1.15	(a)
Hf	7	(a)
Ta	1.5	(a)
W ppb		
Re ppb		
Os ppb		
Ir ppb		
Pt ppb		
Au ppb		
Th ppm		
U ppm		
technique:	*(a) INAA*	