

76539
Vitrophyric Basalt
14.8 grams



Figure 1: Photo of 76539 with mm scale bar. S73-19606

Introduction

76539 is a small aphanitic basalt found in the rake sample collected at station 6, Apollo 17 (see sections on 76500 and 76537).

Petrography

Polished thin sections of 76539 show that it has numerous tiny phenocrysts of skeletal olivine (figure 2) and fine needles of ilmenite (seen in reflected light). The remainder is “opaque” glass.

Chemistry

The chemical composition of 76539 was determined by Rhodes et al. (1976). Trace elements were reported by Wiesmann and Hubbard (1975). Nyquist et al. (1975) reported Rb, Sr and Sr^{87/86}.

Radiogenic age dating

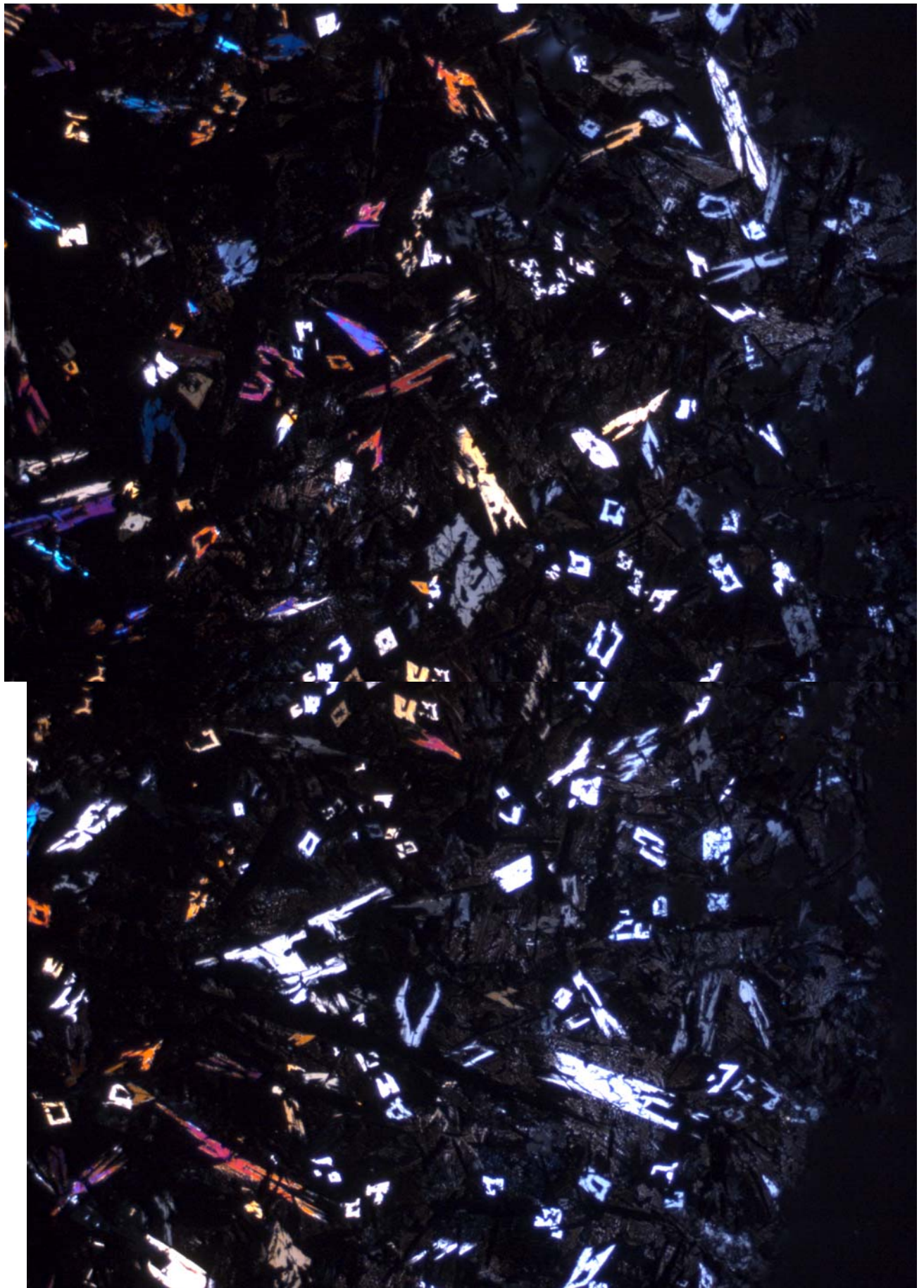
Turner was allocated a piece of 76539 for age dating.

Processing

There are 2 thin section.



Figure 2: Photomicrograph of thin section 76539,9. 2.8 mm across



Lunar Sample Compendium
C Meyer 2011

Table 1. Chemical composition of 76539.

reference	Shih75	Rhodes76	
weight	Wiesmann75		
SiO ₂ %		38.21	(c)
TiO ₂		12.65	(c)
Al ₂ O ₃		8.8	(c)
FeO		19.42	(c)
MnO		0.29	(c)
MgO		7.87	(c)
CaO		10.91	(c)
Na ₂ O		0.39	(c)
K ₂ O	0.052	0.06	(c)
P ₂ O ₅		0.1	(c)
S %		0.16	(c)
sum			
Sc ppm	82		(b)
V			
Cr		2326	(c)
Co	20		(b)
Ni			
Cu			
Zn			
Ga			
Ge ppb			
As			
Se			
Rb	0.393		(a)
Sr	130		(a)
Y			
Zr	196		(a)
Nb			
Mo			
Ru			
Rh			
Pd ppb			
Ag ppb			
Cd ppb			
In ppb			
Sn ppb			
Sb ppb			
Te ppb			
Cs ppm			
Ba	65		(a)
La	5.88		(a)
Ce	18.6		(a)
Pr			
Nd	18.3		(a)
Sm	7.32		(a)
Eu	1.48		(a)
Gd	11.3		(a)
Tb			
Dy	13.3		(a)
Ho			
Er	8.02		(a)
Tm			
Yb	7.4		(a)
Lu			
Hf			
Ta			
W ppb			
Re ppb			
Os ppb			
Ir ppb			
Pt ppb			
Au ppb			
Th ppm			
U ppm			

technique: (a) IDMS, (b) INAA, (c) XRF

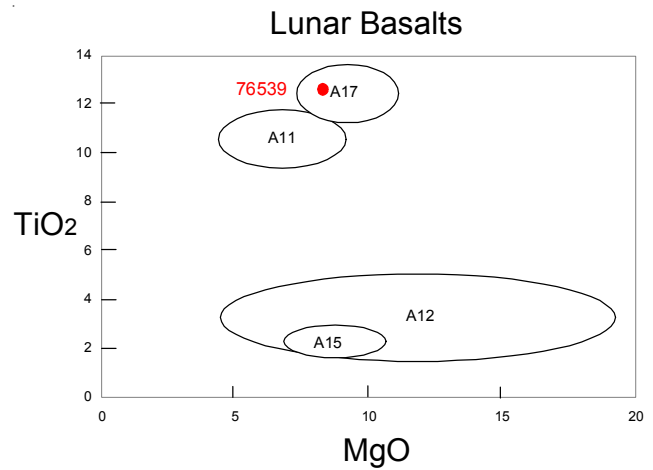


Figure 3: Composition of lunar basalts.

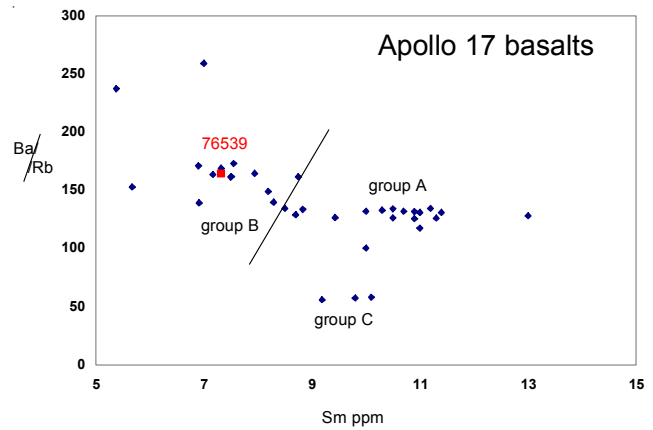


Figure 4: Neal's classification scheme using trace elements.

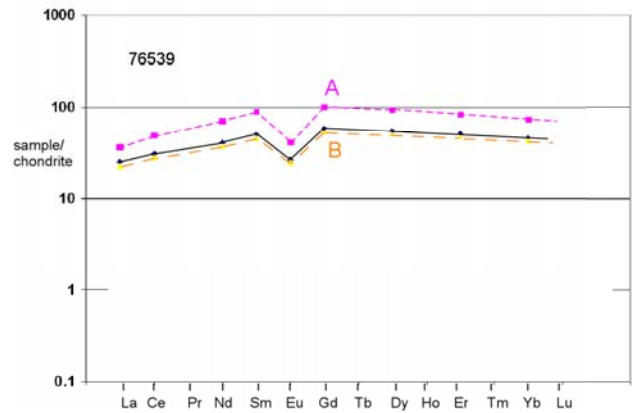
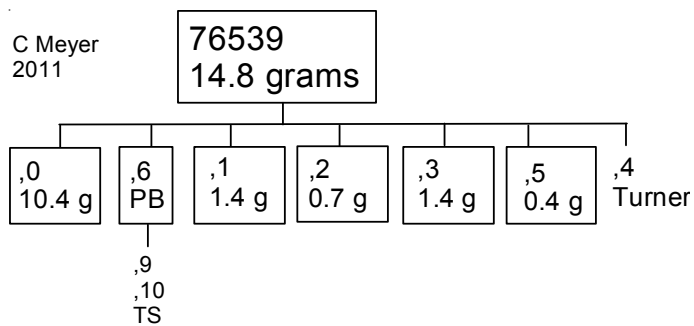


Figure 5: Normalized rare-earth-element diagram for 76539 compared with A and B types of Apollo 17 basalt.



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