

76537
Ilmenite Basalt
26.5 grams



Figure 1: Photo of 76537. Cube is 1 cm. S73-19735

Introduction

76537 is a typical Apollo 17 mare basalt collected as a rake sample from the base of the North Massif – see section on 76500. It has a rounded surface with a nice large zap pit.

Petrography

This fine-grained basalt has a variolitic texture with olivine phenocrysts and long needles of ilmenite (figure 2). Brown pyroxene is intergrown with plagioclase in radial clusters.

Chemistry

Rhodes et al. (1976) and Wiesmann and Hubbard (1976) determined the composition of 76537 and other mare basalts (table). Gibson et al. (1976) determined the sulfur content (1870 ppm).

Radiogenic age dating

Nyquist et al. (1975) reported the Sr isotopes for the bulk sample.

Processing

There are 2 thin sections of 76537.

References for 76537

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Nyquist L.E., Bansal B.M. and Wiesmann H. (1975a) Rb-Sr ages and initial ⁸⁷Sr/⁸⁶Sr for Apollo 17 basalts and KREEP basalt 15386. *Proc. 6th Lunar Sci. Conf.* 1445-1465.

Phinney W.C., Simonds C.H. and Warner J. (1974) Description, Classification and Inventory of Apollo 17 Rake Samples from Station 6. Curator's Catalog, pp. 46.

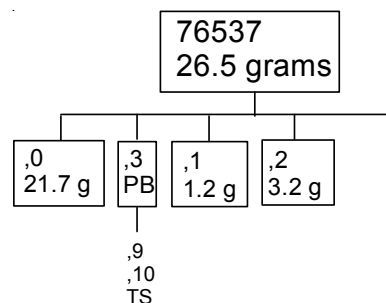


Figure 2: Photomicrograph of 76537 by C Meyer. 2 mm across.

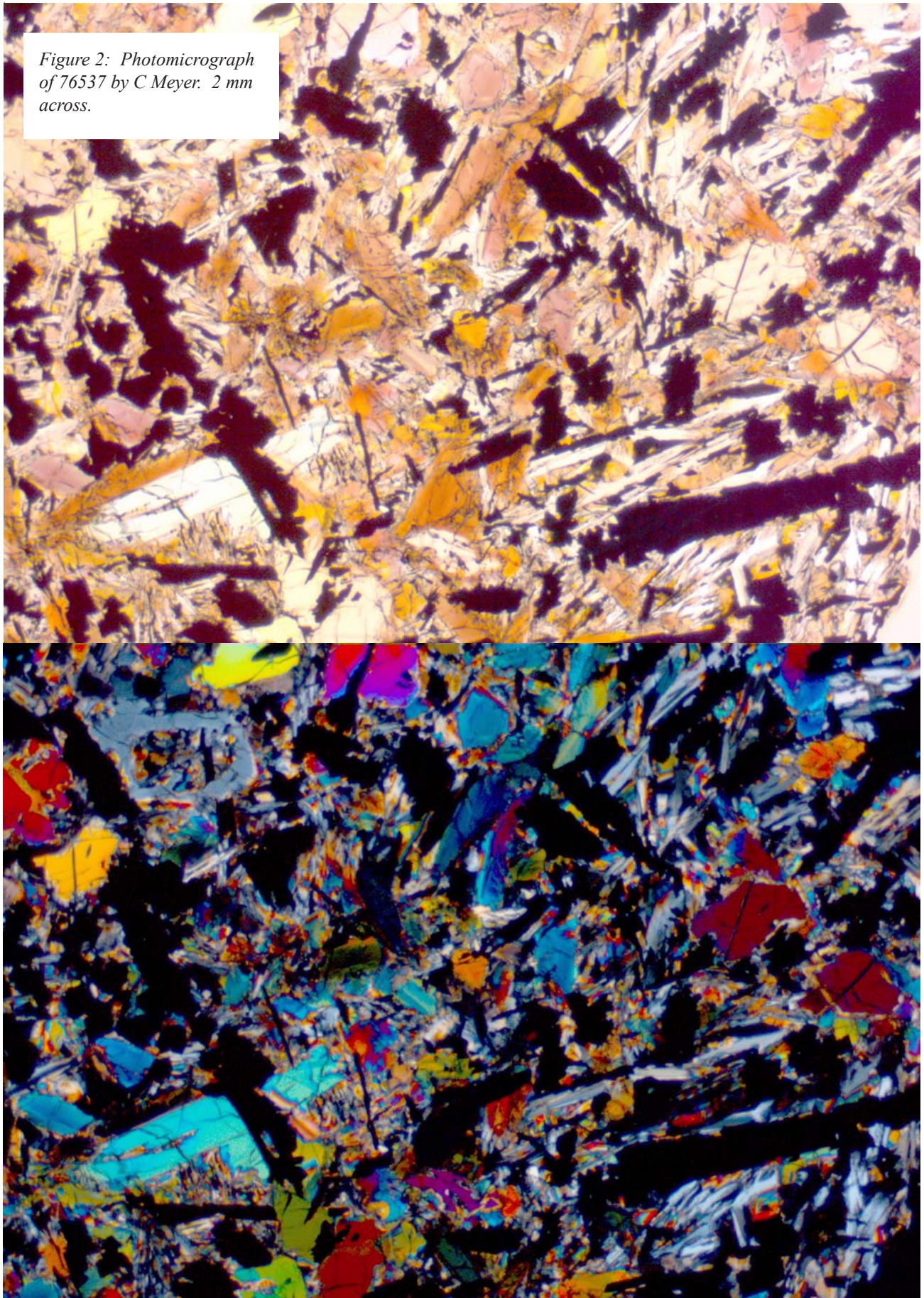


Table 1. Chemical composition of 76537

reference weight	Rhodes76	Shih75	
SiO ₂ %	38.25	(a)	
TiO ₂	13.05	(a)	
Al ₂ O ₃	8.69	(a)	
FeO	19.6	(a)	
MnO	0.29	(a)	
MgO	8.01	(a)	
CaO	10.67	(a)	
Na ₂ O	0.4	(a)	
K ₂ O	0.05	(a)	0.05 (b)
P ₂ O ₅	0.11	(a)	
S %	0.15	(a)	
sum			
Sc ppm		83.7	(b)
V			
Cr	2532	(a)	4740 (b)
Co		20.6	(b)
Ni			
Cu			
Zn			
Ga			
Ge ppb			
As			
Se			
Rb		0.41	(b)
Sr		131	(b)
Y			
Zr		201	(b)
Nb			
Mo			
Ru			
Rh			
Pd ppb			
Ag ppb			
Cd ppb			
In ppb			
Sn ppb			
Sb ppb			
Te ppb			
Cs ppm			
Ba		66.6	(b)
La		6.01	(b)
Ce		19.4	(b)
Pr			
Nd		18.9	(b)
Sm		7.51	(b)
Eu		1.51	(b)
Gd		11.5	(b)
Tb			
Dy		13.6	(b)
Ho			
Er		8.21	(b)
Tm		7.61	(b)
Yb			
Lu			
Hf			
Ta			
W ppb			
Re ppb			
Os ppb			
Ir ppb			
Pt ppb			
Au ppb			
Th ppm		0.45	(b)
U ppm		0.13	(b)

technique: (a) XRF, (b) INAA

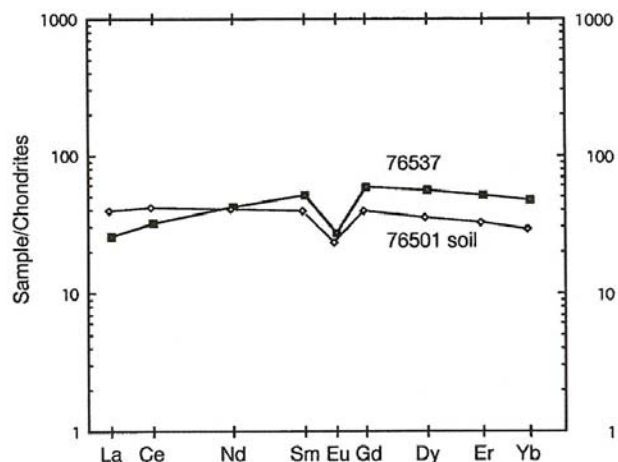


Figure 3: Normalized rare-earth-element diagram for 76537 (and soil).

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