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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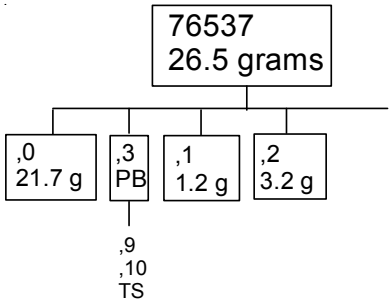

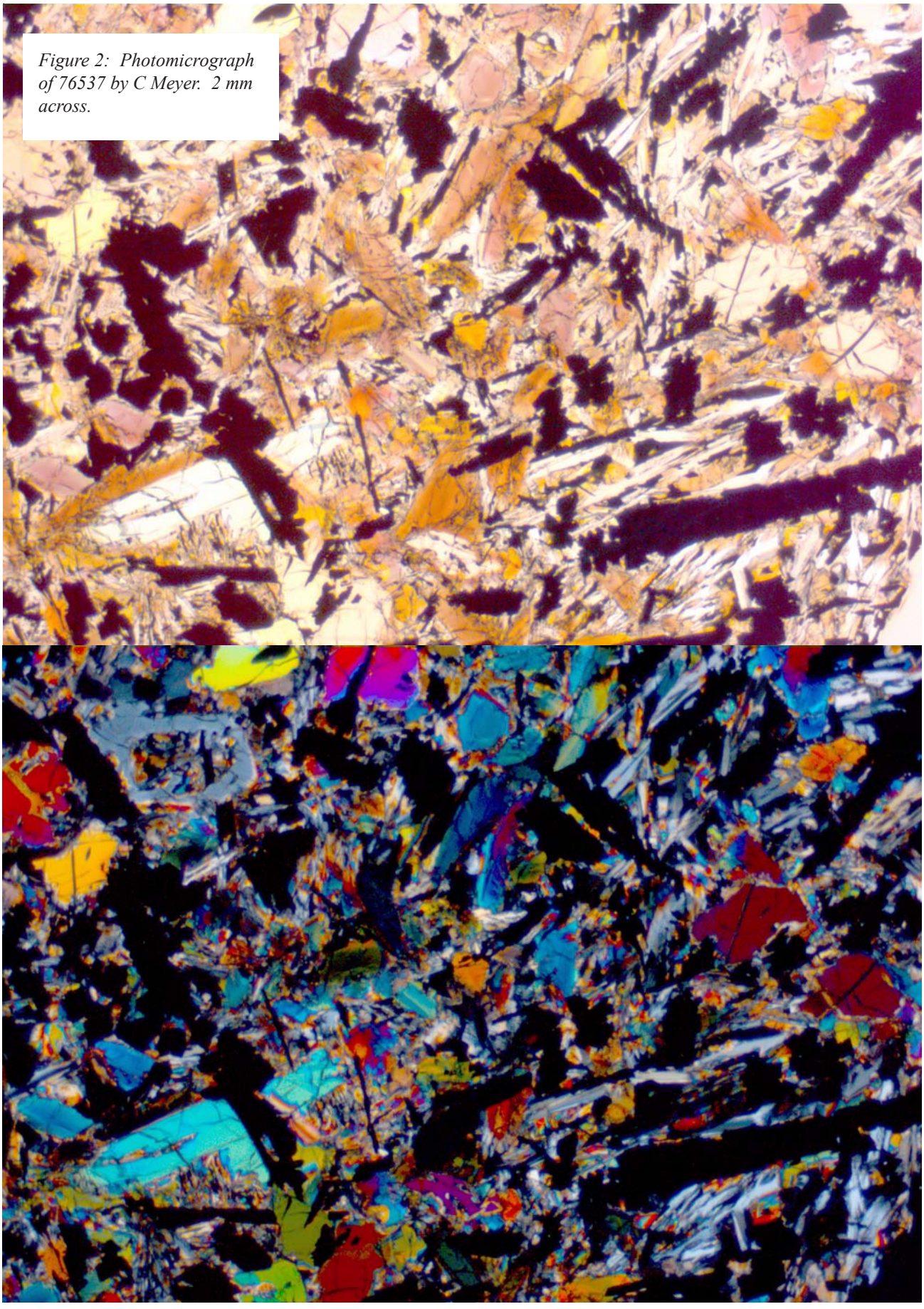

Figure 2: Photomicrograph of 76537 by C Meyer. 2 mm across.

Table 1. Chemical composition of 76537

reference	Rhodes76		Shih75	
weight				
SiO2 %	38.25	(a)		
TiO2	13.05	(a)		
Al2O3	8.69	(a)		
FeO	19.6	(a)		
MnO	0.29	(a)		
MgO	8.01	(a)		
CaO	10.67	(a)		
Na2O	0.4	(a)		
K2O	0.05	(a)	0.05	(b)
P2O5	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*			

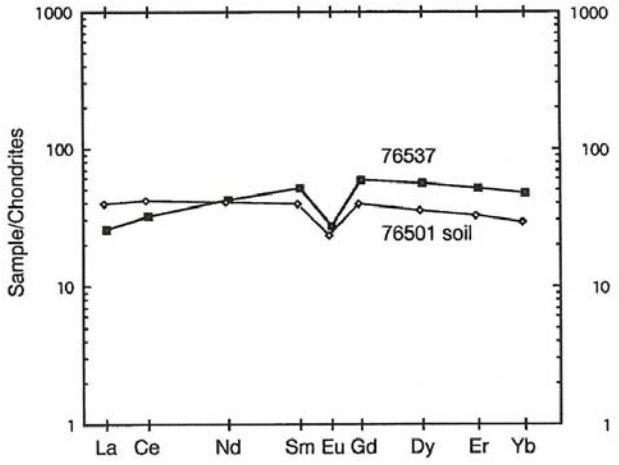

Figure 3: Normalized rare-earth-element diagram for 76537 (and soil).

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