

79515
Ilmenite Basalt
33 grams



Figure 1: Photo of 79515. Scale in cm. S73-19745.

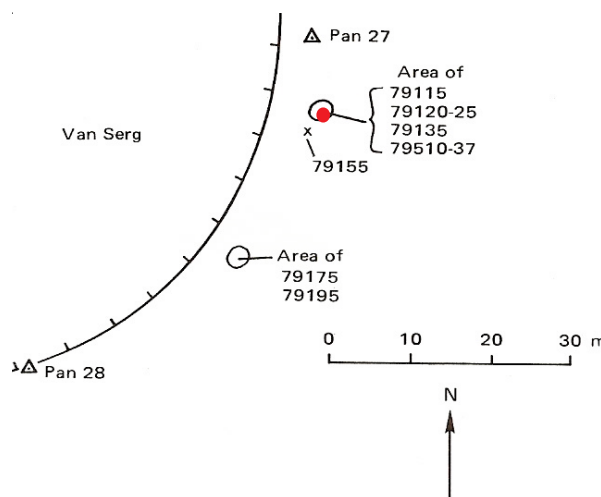


Figure 2: Map of area around Van Serg Crater.

Introduction

79515 is a small basalt sample collected by raking near Van Serg Crater out in the middle of Taurus-Littrow Valley.

Petrography

79515 is a medium-grained, vuggy, subophitic to variolitic basalt (Neal and Taylor 1993).

Chemistry

The analysis by Warner et al. (1979) shows Ti is a bit lower than most Apollo 17 basalts and in the range of Apollo 11 (figure 3). Trace elements indicate it is a type B Apollo 17 basalt (figure 4).

There is only one thin section.

References for 79515

Butler P. (1973) **Lunar Sample Information Catalog Apollo 17**. Lunar Receiving Laboratory. MSC 03211 Curator's Catalog. pp. 447.

Ma M-S., Schmitt R.A., Warner R.D., Taylor G.J. and Keil K. (1979b) Composition, petrography, and genesis of Apollo 17 high-Ti mare basalts (abs). *Lunar Planet. Sci.* **X**, 765-767. Lunar Planetary Institute, Houston.

Neal C.R. and Taylor L.A. (1993) Catalog of Apollo 17 rocks. Vol. 3 Central Valley

Warner R.D., Taylor G.J., Conrad G.H., Northrop H.R., Barker S., Keil K., Ma M.-S. and Schmitt R. (1979a) Apollo 17 high-Ti mare basalts: New bulk compositional data, magma types, and petrogenesis. *Proc. 10th Lunar Planet. Sci. Conf.* 225-247.

Table 1. Chemical composition of 79515.

reference	Warner79	
weight		
SiO ₂ %		
TiO ₂	10.2	(a)
Al ₂ O ₃	9.1	(a)
FeO	18.7	(a)
MnO	0.275	(a)
MgO	9	(a)
CaO	11	(a)
Na ₂ O	0.385	(a)
K ₂ O	0.048	(a)
P ₂ O ₅		
S %		
sum		
Sc ppm	82	(a)
V	100	(a)
Cr	3003	(a)
Co	23	(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	5.3	(a)
Ce	20	(a)
Pr		
Nd	21	(a)
Sm	7.7	(a)
Eu	1.42	(a)
Gd		
Tb	1.7	(a)
Dy	12	(a)
Ho		
Er		
Tm		
Yb	6.7	(a)
Lu	0.96	(a)
Hf	6.2	(a)
Ta	1.4	(a)
W ppb		
Re ppb		
Os ppb		
Ir ppb		
Pt ppb		
Au ppb		
Th ppm		
U ppm		
technique:	(a) INAA	

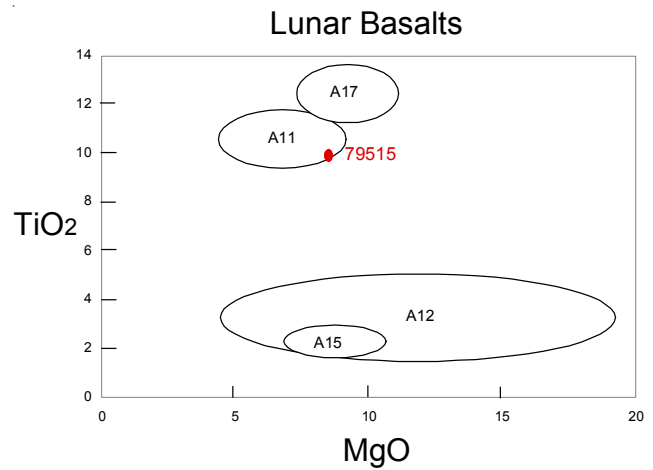


Figure 3: Composition of lunar basalts.

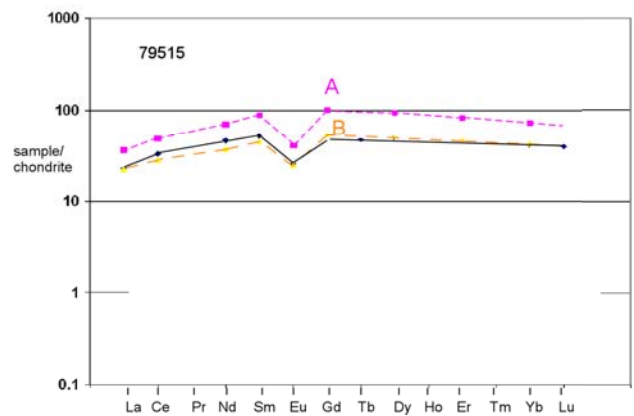
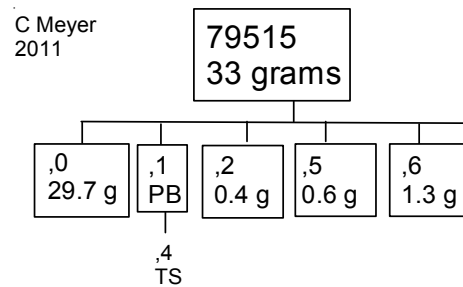


Figure 4: Normalized rare-earth-element diagram for 79515 compared with A and B types of Apollo 17 basalt.



Wolfe E.W., Bailey N.G., Lucchitta B.K., Muehlberger W.R., Scott D.H., Sutton R.L and Wilshire H.G. (1981) The geologic investigation of the Taurus-Littrow Valley: Apollo 17 Landing Site. US Geol. Survey Prof. Paper, 1080, pp. 280.