

revised

15115
Pigeonite Basalt
4 grams



Figure 1: Photo of 15115. Scale in cm/mm. S77-22584.

Introduction

15115 is a relatively coarse basalt. It was collected as a rake sample from station 2, Apollo 15.

Gose et al. (1972) and Pearce et al. (1973) determined the magnetic properties and Ma et al. (1978) reported the chemical composition (see figures).

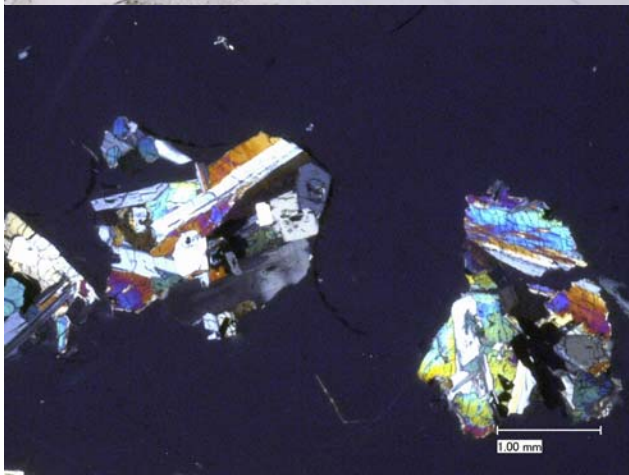
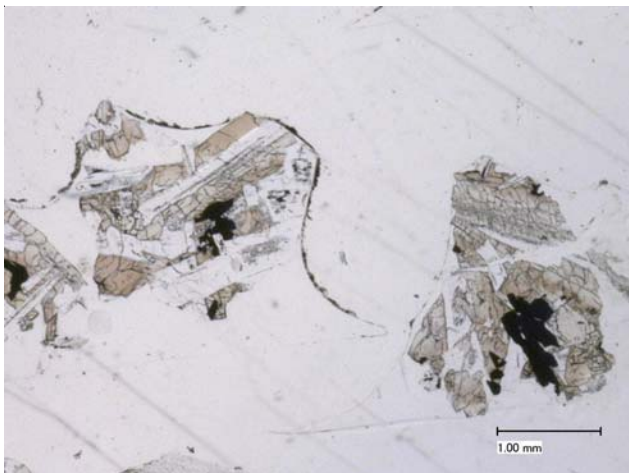


Figure 2: Photomicrographs of thin section 15115,3 by C Meyer @ 50x.

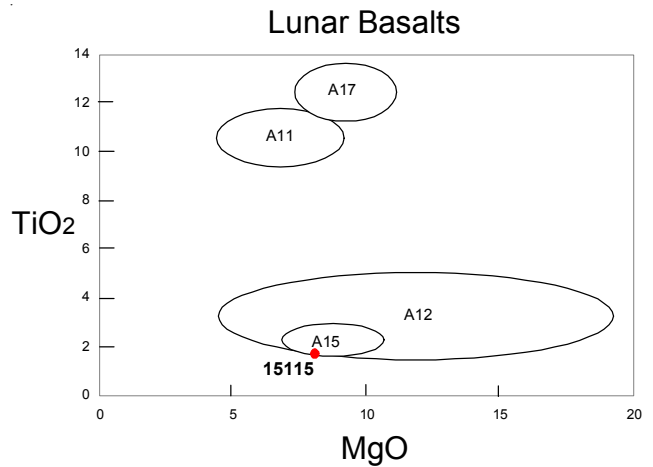


Figure 3: Chemical composition of 15115 compared with other Apollo basalts.

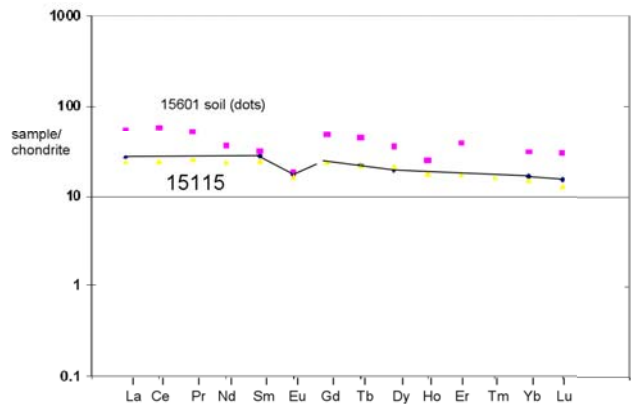


Figure 4: Normalized rare-earth-element diagram for 15115, with 15601 soil for comparison.

Table 1. Chemical composition of 15115.

reference	Ma78	
weight		
SiO ₂ %		
TiO ₂	1.8	(a)
Al ₂ O ₃	9.6	(a)
FeO	20	(a)
MnO	0.275	(a)
MgO	8	(a)
CaO	10	(a)
Na ₂ O	0.306	(a)
K ₂ O	0.055	(a)
P ₂ O ₅		
S %		
sum		
Sc ppm	45	(a)
V	187	(a)
Cr	3051	(a)
Co	41	(a)
Ni	10	(a)
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	70	(a)
La	6.3	(a)
Ce		
Pr		
Nd		
Sm	4.1	(a)
Eu	0.94	(a)
Gd		
Tb	0.8	(a)
Dy	4.7	(a)
Ho		
Er		
Tm		
Yb	2.7	(a)
Lu	0.37	(a)
Hf	2.6	(a)
Ta	0.43	(a)
W ppb		
Re ppb		
Os ppb		
Ir ppb		
Pt ppb		
Au ppb		
Th ppm		
U ppm		
technique:	(a) INAA	

References for 15115

Butler P. (1971) Lunar Sample Catalog, Apollo 15. Curators' Office, MSC 03209

Gose W.A., Pearce G.W., Strangway D.W. and Carnes J. (1972) Magnetism of Apollo 15 samples. *In The Apollo 15 Lunar Samples*, 415-417.

Lofgren G.E., Donaldson C.H. and Usselman T.M. (1975) Geology, petrology and crystallization of Apollo 15 quartz-normative basalts. *Proc. 6th Lunar Sci. Conf.* 79-99.

LSPET (1972a) The Apollo 15 lunar samples: A preliminary description. *Science* 175, 363-375.

LSPET (1972b) Preliminary examination of lunar samples. Apollo 15 Preliminary Science Report. NASA SP-289, 6-1—6-28.

Ma M.-S., Schmitt R.A., Warner R.D., Taylor G.J. and Keil K. (1978) Genesis of Apollo 15 olivine normative mare basalts: Trace element correlations. *Proc. 9th Lunar Sci. Conf.* 523-533.

Pearce G.W., Gose W.A. and Strangway D.W. (1973) Magnetic studies on Apollo 15 and 16 lunar samples. *Proc. 4th Lunar Sci. Conf.* 3045-3076.

Ryder G. (1985) Catalog of Apollo 15 Rocks (three volumes). Curatorial Branch Pub. # 72, JSC#20787

Ryder G. and Steele A. (1988) Chemical dispersion among Apollo 15 olivine-normative mare basalts. *Proc. 18th Lunar Planet. Sci.* 273-282. Lunar Planetary Institute, Houston.

Swann G.A., Hait M.H., Schaber G.C., Freeman V.L., Ulrich G.E., Wolfe E.W., Reed V.S. and Sutton R.L. (1971b) Preliminary description of Apollo 15 sample environments. U.S.G.S. Interagency report: 36. pp219 with maps

Swann G.A., Bailey N.G., Batson R.M., Freeman V.L., Hait M.H., Head J.W., Holt H.E., Howard K.A., Irwin J.B., Larson K.B., Muehlberger W.R., Reed V.S., Rennilson J.J., Schaber G.G., Scott D.R., Silver L.T., Sutton R.L., Ulrich G.E., Wilshire H.G. and Wolfe E.W. (1972) 5. Preliminary Geologic Investigation of the Apollo 15 landing site. In Apollo 15 Preliminary Science Rpt. NASA SP-289. pages 5-1-112.