

# Northwest Africa 4819

Anorthositic regolith breccia

234 g



Figure 1: Slice through NWA 4819 with 1 mm scale bars below (photo courtesy of R. Korotev).

## **Introduction**

Northwest Africa 4819 was found in 2007, and consists of a 234 g stone with some fusion crust. Weathering products are visible along a network of thin fractures. In general, though, the stone is dark and fine grained with only a few clasts that exceed 1 mm in diameter (Connolly et al., 2008).

## **Petrography, mineralogy, and chemistry**

The lithic clasts present in NWA 4819 include anorthosites, anorthositic norites (orthopyroxene =  $\text{Fs}_{35.4}\text{Wo}_{4.3}$  and plagioclase =  $\text{An}_{96.5}$ ), gabbros, and troctolites (olivine =  $\text{Fa}_{28.1}$ ;  $\text{FeO}/\text{MnO} = 105$ ; pigeonite =  $\text{Fs}_{26.9}\text{Wo}_{5.9}$ ;  $\text{FeO}/\text{MnO} = 54$ ; and plagioclase =  $\text{An}_{97}$ ). There are also shock melt clasts. Of particular interest is a large amount of homogeneously distributed FeNi metal (kamacite mean Ni = 6.2, Co = 0.77 wt% and taenite Ni - 8.2 - 23.6 wt%). and troilite, as well as a large amount of pyroxene (Connolly et al., 2008). INAA analyses of small (275 mg) chip yields FeO = 7.0%, Ni = 290 ppm, Sm = 3.4 ppm, Th = 1.5 ppm, Ir = 12 ppb. This composition resembles some Apollo 16 regolith soils (Korotev et al., 2008).

## **Radiogenic age dating and Cosmogenic isotopes and exposure ages**

None yet reported.