

15546      COARSE-GRAINED OLIVINE-NORMATIVE      ST. 9A      27.8 g  
MARE BASALT

**INTRODUCTION:** 15546 is a coarse to medium-grained granular olivine-normative mare basalt (Fig. 1). It contains olivine, most of which is not phenocrystic. Its small yellow-green olivines are not abundant macroscopically. The sample is blocky, angular, and tough, with a few vugs. There are a few zap pits on all surfaces and some glass on one surface. 15546 was collected in the vicinity of the moderately fresh, blocky, 3 m-diameter crater from which 15535 and 15536 were sampled, but it has not been identified in photographs.

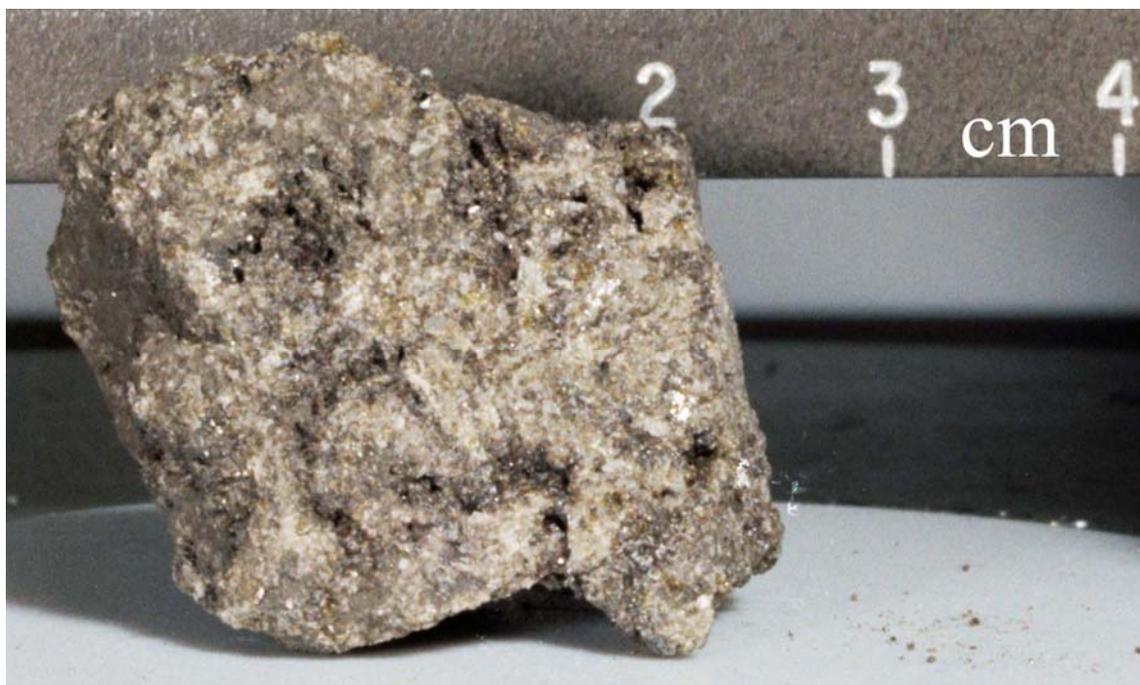


Figure 1. Pre-chip, macroscopic view of 15546. S-71-44926

**PETROLOGY:** 15546 is a coarse- or medium-grained olivine-normative mare basalt consisting of generally large, anhedral crystals (Fig. 2), i.e., it is granular rather than diabasic. The dominant phase is pigeonite which is zoned, and some crystals are twinned. They are generally less than 2 mm long, and many contain small olivine inclusions. Some olivines are discrete grains, most irregularly-shaped, and most less than 1 mm across. Small euhedral olivines are enclosed within the plagioclases, which like the pyroxenes are about 1 to 2 mm across; the plagioclases are irregularly-twinned. Cristobalite is ubiquitous, and opaque minerals (chromite, ulvospinel, ilmenite) are common. Fayalite occurs as a residual phase with sulfide, ilmenite, and rare glass. 15546 has a texture similar to 15547 but is a little finer-grained.

PROCESSING AND SUBDIVISIONS: ,1 was chipped from one corner and partly used to make thin sections ,5 through ,8.

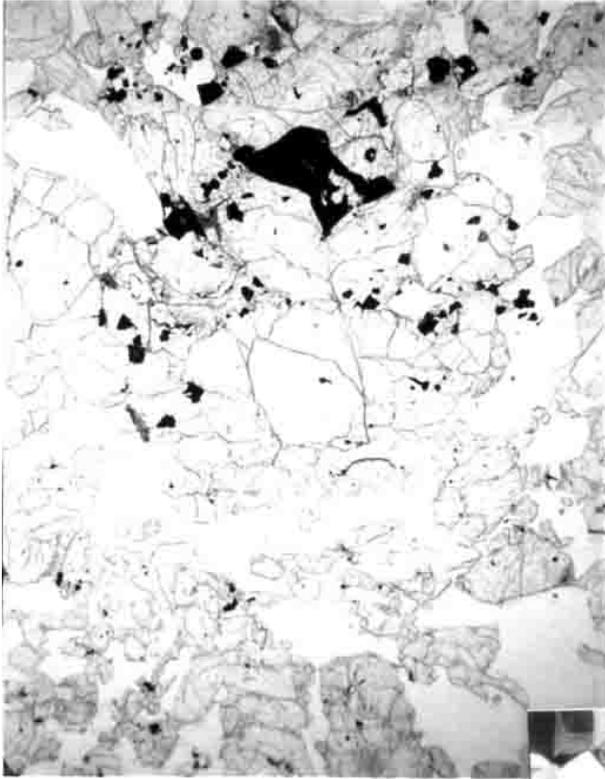


Fig. 2a



Fig. 2b

Figure 2. Photomicrograph of 15546,5. Grain in center is olivine. Width of field about 3 mm. a) transmitted light; b) crossed polarizers.