15119 FINE-GRAINED OLIVINE-NORMATIVE MARE BASALT AND REGOLITH BRECCIA ST. 2 1 4.1 g

INTRODUCTION: 15119 is an olivine-normative mare basalt with a microporphyritic texture. The phenocrysts are small, sparse, and yellow-green olivines. A regolith breccia adheres to the basalt (Fig. 1), hence the basalt is actually a clast. The basalt is tough; the regolith breccia is friable and brownish-gray. Zap pits occur on the regolith breccia, and the basalt has a few vugs. 15119 was collected as part of the rake sample 5 m east of the boulder at Station 2 (see Fig. 15105-2).

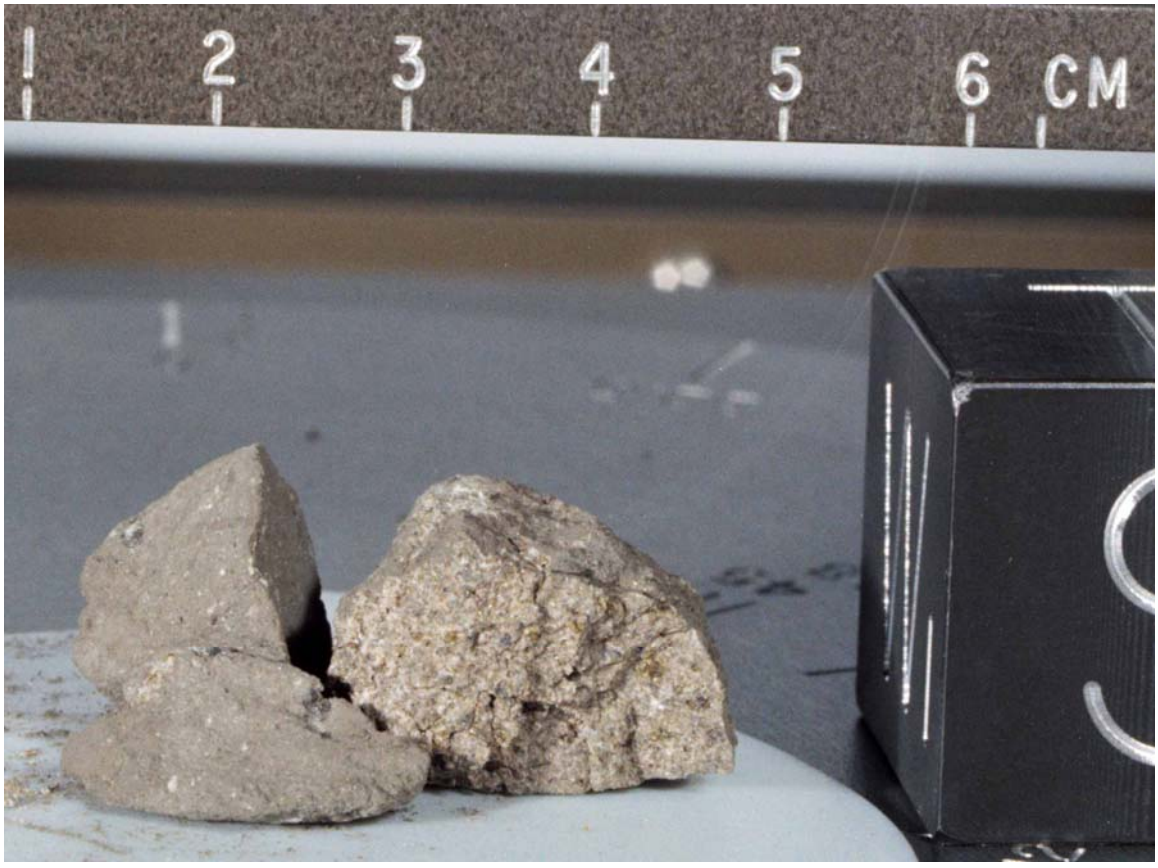


Figure 1. Sample 15119 before chipping the basalt. S-71-48776

PETROLOGY: The basalt in 15119 consists of a groundmass of granular-looking pyroxene enclosed in plagioclase, and contains sparse olivine phenocrysts (Fig. 2). It is fairly similar to 15105 except that some of its plagioclases are bigger. The regolith breccia has not been sectioned. Macroscopically it contains glass including green glass spheres, basaltic clasts, and chalky white clasts.

Figure 2. Photomicrograph of 15199,12 (a poor section ).
An olivine microphenocryst is on the center left edge.
Crossed polarizers. Width about 1.25 mm.

CHEMISTRY: Analyses are listed in Table 1 with rare earths plotted in Figure 3. The analyses are of an olivine-normative mare basalt, on the Mg-poor end of the spectrum.

PHYSICAL PROPERTIES: Gose et al. (1972) and Pearce et al. (1973), using a Develco Cryogenic magnetometer, found a natural remanent magnetism intensity of $8.6 \times 10^{-6}$ emu/g for the sample, typical of Apollo 15 mare basalts.

PROCESSING AND SUBDIVISIONS: The breccia easily broke from the basalt (Fig. 1). The basalt was chipped to provide allocations and is now ,0 (6.90 g). Thin sections ,3 and ,12 were made from ,3 and are only basalt. The breccia has not been allocated and is dominantly chips ,1 (2.5 g) and ,4 (2.53g).

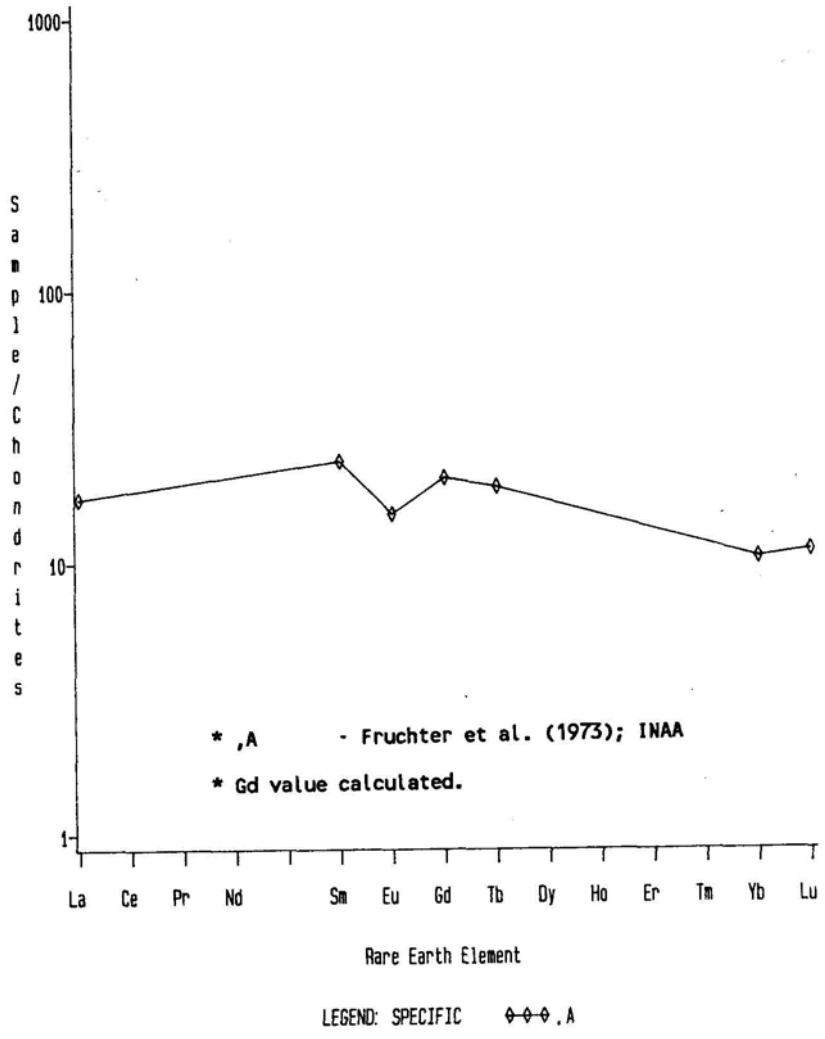


Figure 3. Rare earths in the basalt in 15199 (Fruchter et al., 1973).

TABLE 15119-1. Chemical analyses of the mare basalt in 15119

| | | | ,5 |
|---|---|---|---|
| Wt % | SiO2 | | 45.23 |
| | TiO2 | 2.86 | 2.64 |
| | Al2O3 | 8.9 | 9.24 |
| | FeO | 21.9 | 22.25 |
| | MgO | | 8.93 |
| | CaO | | 10.55 |
| | Na2O | 0.290 | 0.30 |
| | K2O | | 0.05 |
| | P2O5 | | 0.09 |
| (ppm) | Sc | 45 | |
| | V | | |
| | Cr | 3400 | 3220 |
| | Mn | | 2405 |
| | Co | 47 | |
| | Ni | | |
| | Rb | | |
| | Sr | | |
| | Y | | |
| | Zr | | |
| | Nb | | |
| | Hf | 2.8 | |
| | Ba | | |
| | Th | | |
| | U | | |
| | Pb | | |
| | La | 5.7 | |
| | Ce | | |
| | Pr | | |
| | Nd | | |
| | Sm | 4.3 | |
| | Eu | 1.05 | |
| | Gd | | |
| | Tb | 0.9 | |
| | Dy | | |
| | Ho | | |
| | Er | | |
| | Tm | | |
| | Yb | 2.1 | |
| | Lu | 0.38 | |
| | Li | | |
| | Be | | |
| | B | | |
| | C | | |
| | N | | |
| | S | | 500 |
| | F | | |
| | Cl | | |
| | Br | | |
| | Cu | | |
| | Zn | | |
| (ppb) | I | | |
| | At | | |
| | Ga | | |
| | Ge | | |
| | As | | |
| | Se | | |
| | Mo | | |
| | Te | | |
| | Ru | | |
| | Rh | | |
| | Pd | | |
| | Ag | | |
| | Cd | | |
| | In | | |
| | Sn | | |
| | Sb | | |
| | Te | | |
| | Cs | | |
| | Ta | | |
| | W | | |
| | Re | | |
| | Os | | |
| | Ir | | |
| | Pt | | |
| | Au | | |
| | Hg | | |
| | Tl | | |
| | Bi | | |
| | | (1) | (2) |

References and methods:

(1) Pruchter et al. (1973); INAA
(2) Chappell and Green (1973); XRF