

INTRODUCTION: 15356 is a fine-grained, clast-bearing impact melt of high alumina basalt composition, and with apparently high alkali ($K_2O \sim 0.6\%$). It is dark gray, aphanitic, and coherent (Fig. 1) and had dust coating two sides. It appeared to lack zap pits. 15356 was collected as part of the rake sample from the north-east rim of Spur Crater.

PETROLOGY: 15356 is a fine-grained, clast-bearing impact melt (Fig. 2). Simonds et al. (1975) described it as an ultrafine, subophitic impact melt with mineral clasts, containing about 50% plagioclase. Dowty et al. (1973b) described it as a breccia of alkalic high-alumina basalt composition, containing plagioclases, pyroxenes, and olivines (Fig. 3), as well as minor metal, K-rich glass, Ba-K-feldspar, Zr-armalcolite, rutile, and ilmenite. Mineral analyses were presented by Nehru et al. (1973, 1974) and Hlava et al. (1973). Nehru et al. (1974) noted that the rock contains homogeneous pink spinel, but lacks chromite. They suggested that the restricted mineral compositions in the sample indicated that 15356 was a monomict breccia. The metal grains, containing 0.4 to 0.5% Co and $\sim 5\%$ Ni, indicate meteoritic contamination of the sample.

In thin section ,3 (Fig. 2), the olivines are clasts, as are some of the plagioclases, while the pyroxene and the remaining plagioclases form the melt groundmass. The pyroxenes form small poikilitic phases (Fig. 2c) enclosing plagioclases. In a few patches the melt has a subophitic texture. The metal forms blebs and the ilmenites are needle-like. There are no lithic fragments. Some of the plagioclase clasts have a sieved, melted, and assimilated appearance.

CHEMISTRY: The only chemical analysis is the microprobe defocussed beam analysis of thin section 15356,4 by Dowty et al. (1973b) (Table 1), which indicates a high-alumina basalt and high-incompatible elements composition (K_2O 0.58%, P_2O_5 0.34%) of the sample.

PROCESSING AND SUBDIVISIONS: The sample was chipped (Fig. 4), and thin sections ,3 and ,4 were made from ,1. Only 0.01 g remains of ,1. ,0 exists as several small fragments with a mass of 1.38 g.

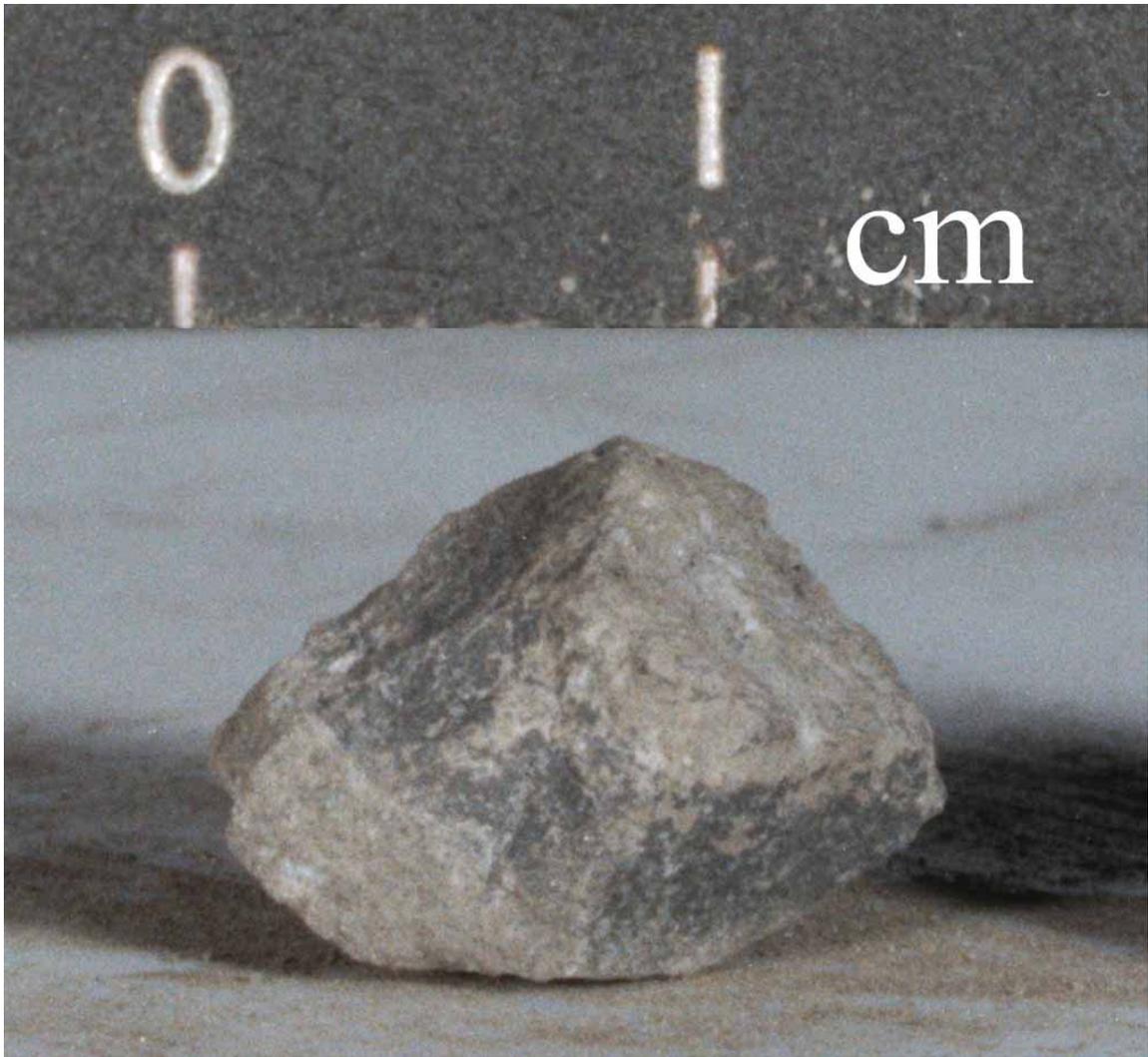


Figure 1. Pre-split of 15356. S-71-49372

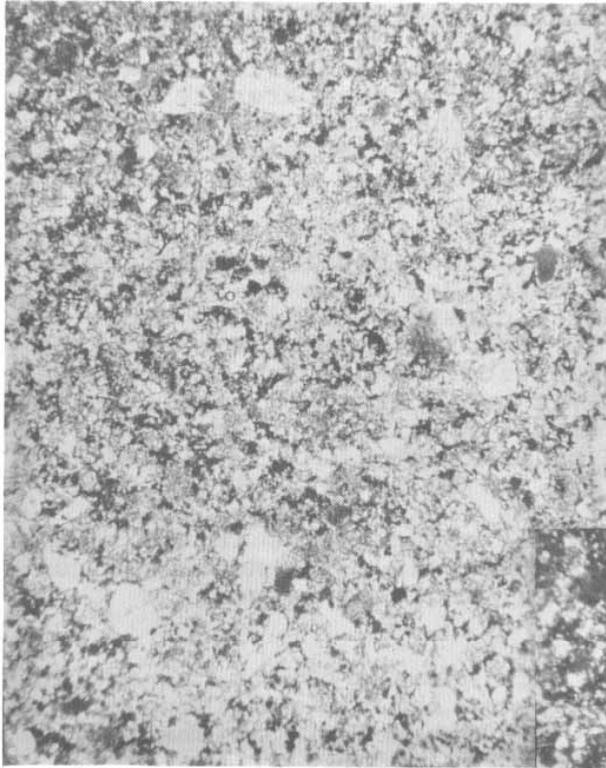


Fig. 2a

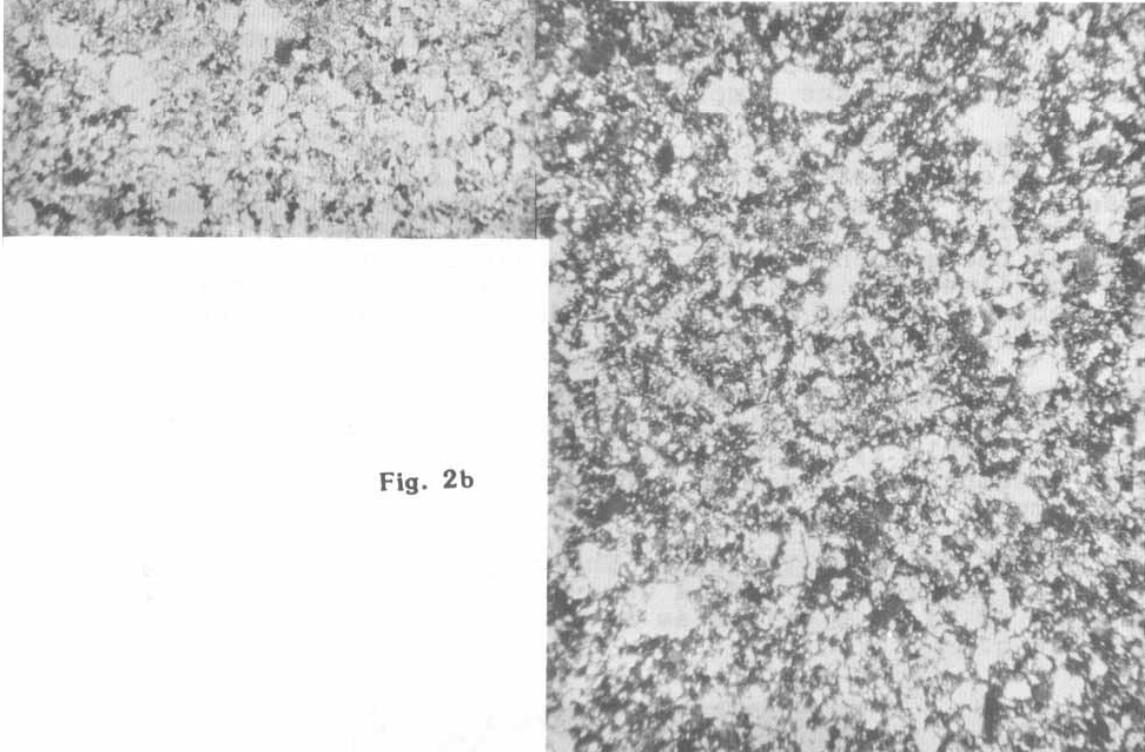


Fig. 2b

Figure 2. Photomicrographs of 15356,3.

- a) general view showing fine-grained, regular texture and clasts.
Transmitted light. Width about 2 mm.
- b) as (a), crossed polarizers.
- c) groundmass view showing tiny pyroxene oikocrysts (e.g., elongated, mottled, pale-colored objects) and clasts (e.g., clear objects).
Crossed polarizers. Width about 600 microns.
- d) reflected light view of groundmass, showing pyroxenes (pale-grey), plagioclases (darker grey) and metal (white). Width about 125 microns.



Fig. 2c



Fig. 2d

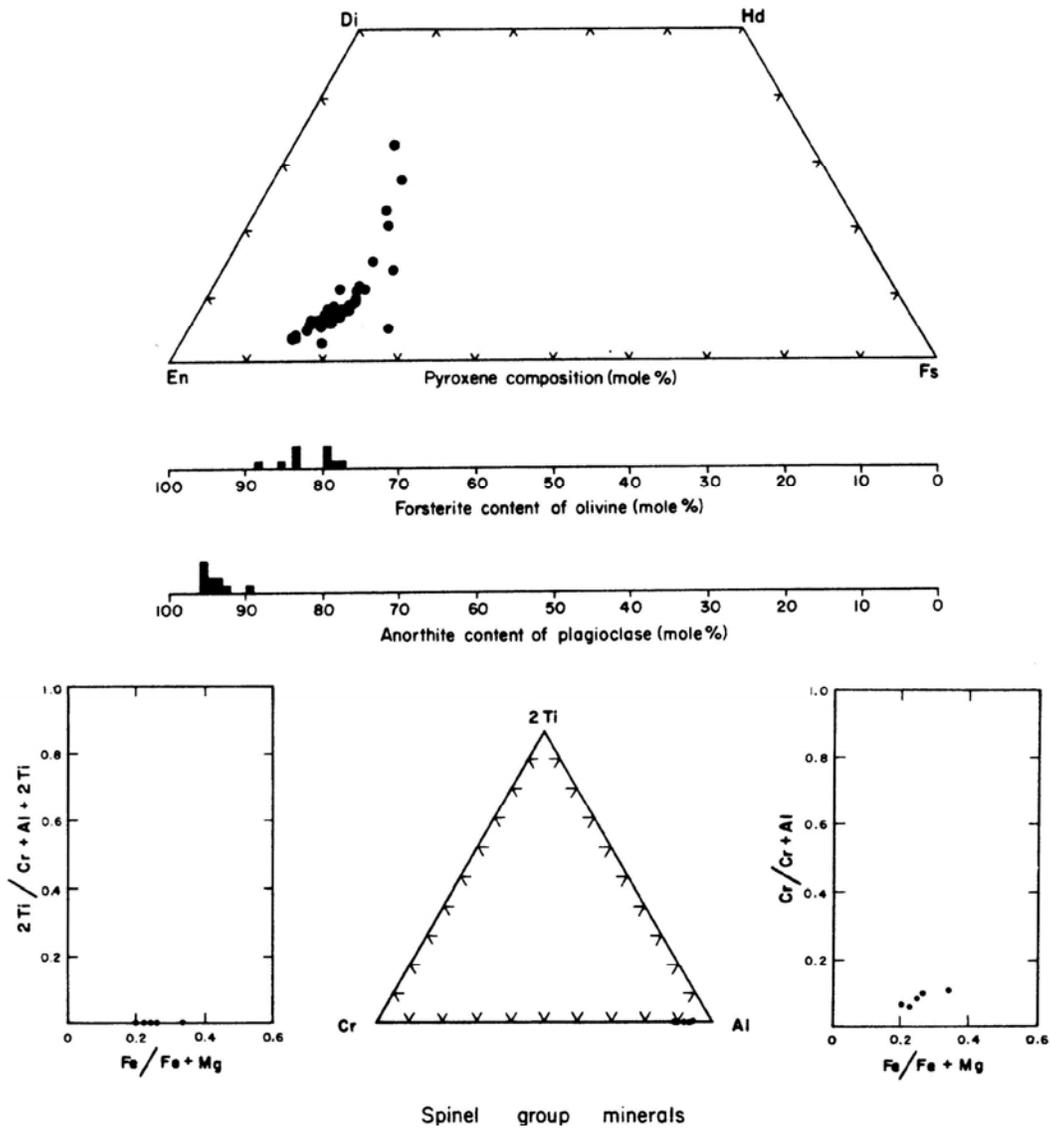


Figure 3. Compositions of minerals in 15356 (from Dowty et al., 1973b). Olivines and spinels are clasts, most plagioclases analyzed are probably clasts.

TABLE 15356-1 Defocussed Beam microprobe analysis of 15356,4.
(Dowty et al., 1973b)

Wt %	SiO ₂	45.6
	TiO ₂	1.12
	Al ₂ O ₃	20.0
	FeO	7.5
	MgO	13.7
	CaO	10.2
	Na ₂ O	0.68
	K ₂ O	0.58
	P ₂ O ₅	0.34
	ppm	Cr
Mn		850

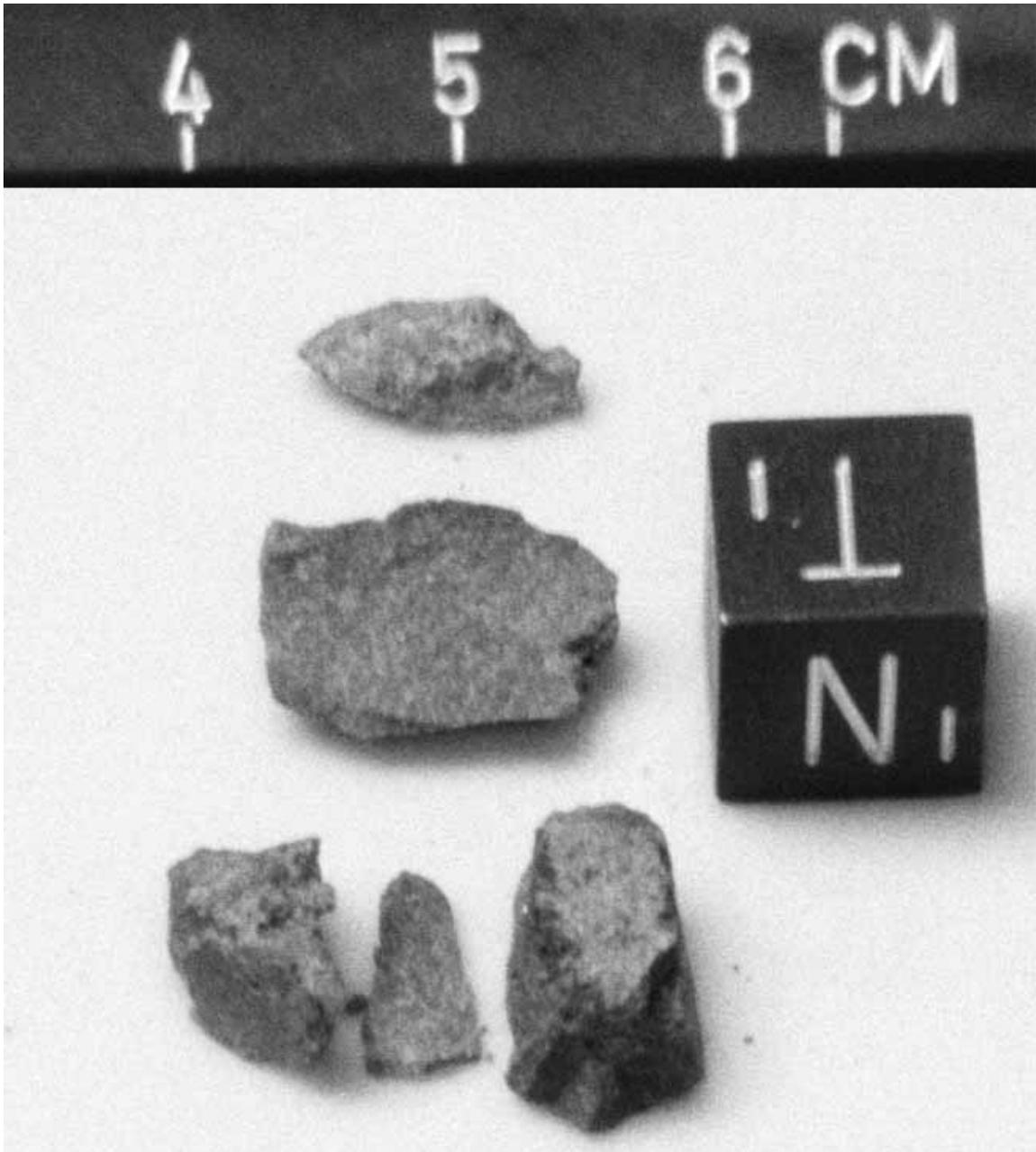


Figure 4. Photograph of chipping of 15356. The larger piece, nearest the scale cube, is .1. The rest are .0. S-71-57966