15651	FINE-GRAINED OLIVINE-NORMATIVE MARE BASALT	ST. 9A	1.60 g

INTRODUCTION: 15651 is a fine-grained, pale-colored, non-vesicular, olivine-bearing mare basalt (Fig. 1). It has been moderately shocked. The olivines do not appear to form phenocrysts and are visible but not conspicuous macroscopically. The sample appears to be a member of the Apollo 15 olivine-normative mare basalt group. It is angular and friable. 15651 was collected as part of the rake sample at Station 9A.

Figure 1. Pre-chip view of 15651. S-71-49769

PETROLOGY: 15651 is a moderately fine-grained, olivine-bearing mare basalt with a subophitic or gabbroic texture; it has been somewhat cataclasized by shock (Fig. 2). Dowty et al. (1973a,b) found it to be finer-grained than most olivine microgabbros and that it might be olivine phyric. They reported a mode of 62% pyroxene, 28% plagioclase, 3% olivine, 0.3% silica, 5% opaques, and 1.7% miscellaneous. Dowty et al. (1973c) tabulated microprobe analyses of pyroxene, olivine, plagioclase, and Fe-metal; and Nehru et al. (1973) tabulated analyses of spinel group and ilmenite minerals. Nehru et al. (1974) included 15651 in their general discussion of opaque minerals but: reported no specific data or comment. The mineral chemistry (Fig. 3) is typical for Apollo 15 olivine-normative mare basalts.

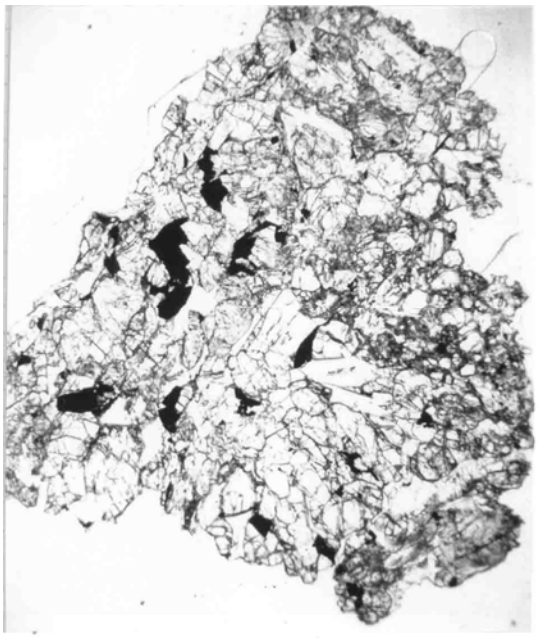

Fig. 2a

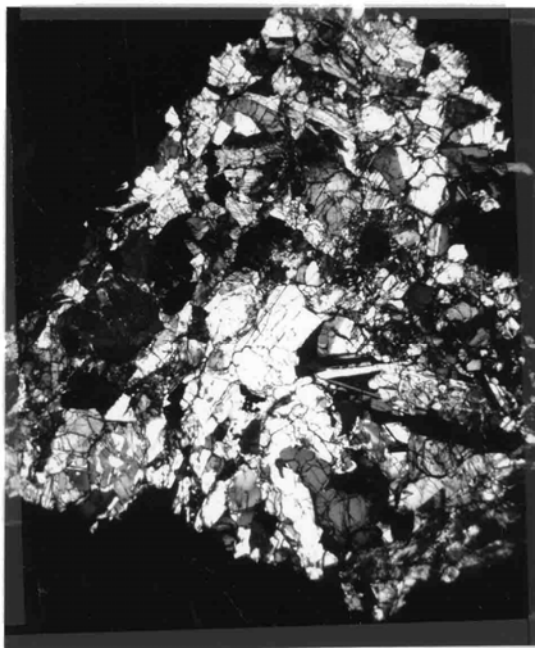

Fig. 2b

Figure 2. Photomicrographs of entire thin section 15651,6, about 3 mm across. a) transmitted light; b) crossed polarizers.

CHEMISTRY: The only chemical data is a microprobe defocussed beam bulk rock analysis (Table 1). This analysis is consistent with 15651 being a member of the Apollo 15 olivine-normative mare basalt group. The measured TiO_2 is high and K_2O low, suggesting some sampling problems.

PROCESSING AND SUBDIVISIONS: Chipping produced ,1 which was mostly used to make thin sections ,6 to ,8. ,0 is now 1.45 g.

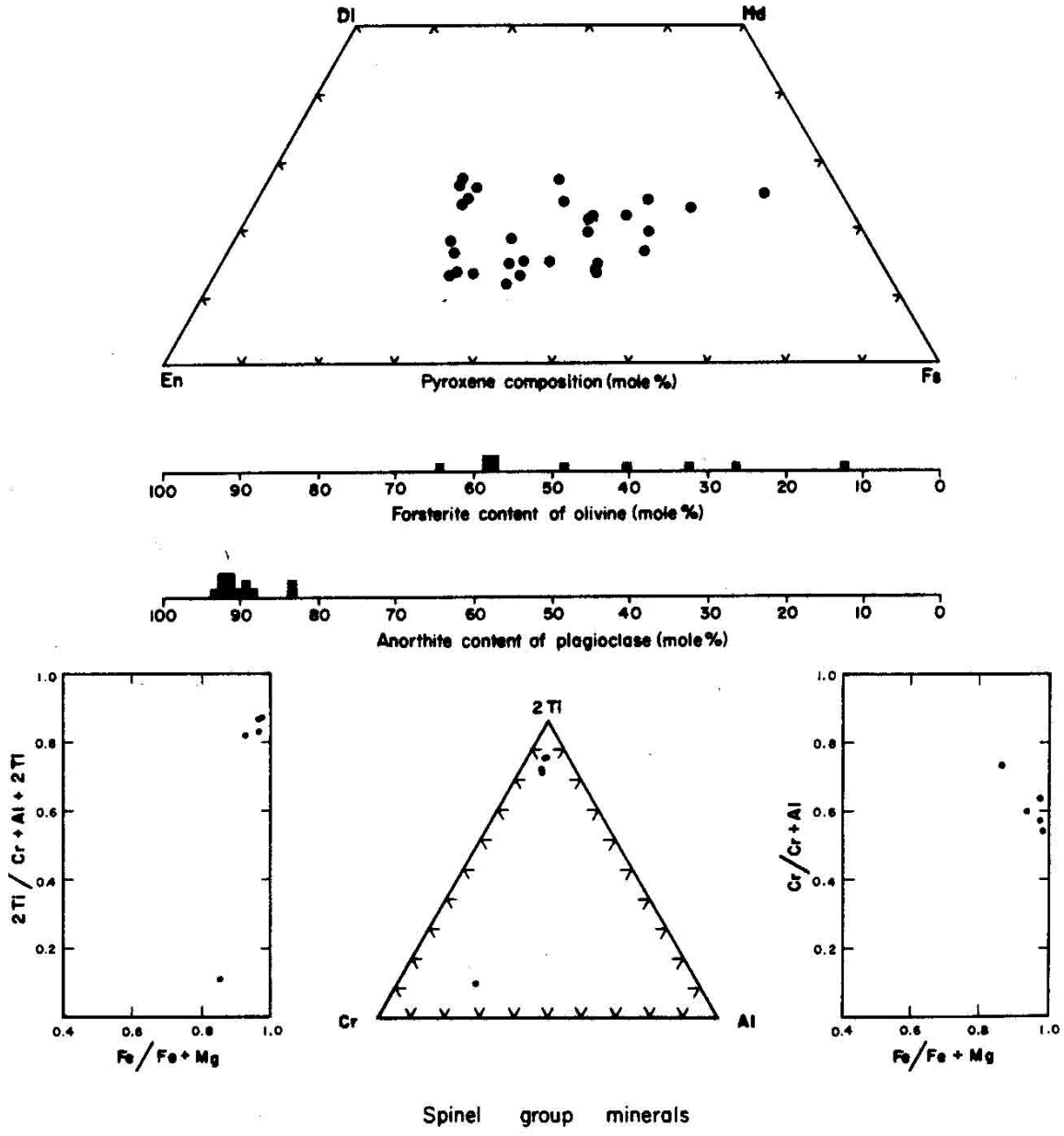

Figure 3. Chemistry of minerals in 15651 (Dowty et al., 1973b).

TABLE 15651-1. Defocussed beam bulk analysis
(Dowty et al., 1973a,b)

Wt %	SiO2	43.7
	TiO3	3.1
	Al2O3	8.9
	FeO	23.9
	MgO	10.9
	CaO	9.0
	Na2O	0.25
	K2O	<0.01
	P2O5	0.04
ppm	Cr	2330
	Mn	1940