

INTRODUCTION: 62275 is a white, very friable, cataclastic anorthosite. Mineral compositions and limited chemical data suggest that the rock is monomict. Macroscopically it has a chalky to sugary texture and a locally streaked appearance. There is no glass coat but a thin layer of patina is present on some surfaces. Zap pits are rare to absent on all surfaces but the rock's friable nature is not amenable to the preservation of surface features. The sample was collected ~25 m southeast of Buster Crater as a single specimen but has since disintegrated (Fig. 1). Lunar orientation is known.

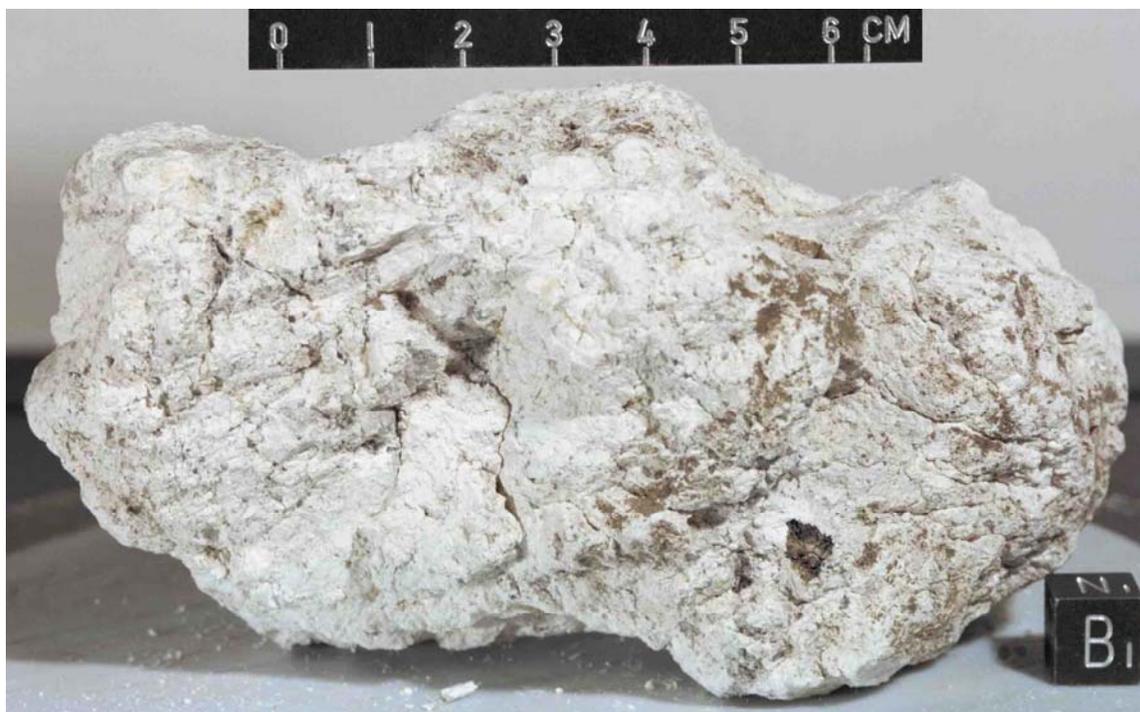


FIGURE 1. S-72-38386.

PETROLOGY: Prinz et al. (1973) and Dowty et al. (1974a) provide petrographic information. The rock is an extremely shocked and cataclasized anorthosite (Fig. 2). Isolated clasts of plagioclase (An_{97-99}) and a brownish microcrystalline material (up to 2 mm long) rest in a finely comminuted anorthositic matrix. Modal data are given in Table 1. The brownish clasts are not simply recrystallized plagioclase but are enriched in Fe and Mg relative to both pure plagioclase and the bulk rock (Table 2). From the data available it is not possible to tell if these clasts represent foreign material or were formed more or less in situ. Mafic minerals are concentrated in highly crushed zones. Despite

extensive cataclasis, a relict cumulate texture is discernable in some areas and a few mafic-plagioclase grain boundaries have survived. Mineralogically 62275 is similar to known pristine anorthosites. Mafics are ferroan and largely equilibrated (Fig. 3). The small range of mineral compositions indicate that the rock may be monomict. Chromite-rich spinel (FeCr_2O_4 ~60 mol%), rare Fe-metal and troilite are accessory minerals.



FIGURE 2. 62275,4, general view, partly xpl. Width 3 mm.

From the composition of the olivine-2 pyroxene-plagioclase assemblage, Herzberg (1979) calculates a temperature of equilibration of ~780-980°C and a pressure of equilibration of ~1.3 - 3.2 kb.

CHEMISTRY: A “bulk rock” defocused electron beam analysis (DBA) of a thin section is presented by Prinz et al. (1973) and reproduced in Dowty et al. (1974a) and here as Table 2 with an average microprobe analysis of the brownish clasts. The high Fe/Mg of the rock is comparable to that of other ferroan anorthosites.

Clark and Keith (1973) provide natural and cosmogenic radionuclide abundance data. The very low K (119 ppm), Th (0.009 ppm) and U (<0.006 ppm) indicate very little, if any, contamination by KREEP.

EXPOSURE AGES: Cosmogenic radionuclide data are reported by Clark and Keith (1973). The rock is probably saturated in ^{26}Al relative to ^{22}Na ($^{26}\text{Al}/^{22}\text{Na} = 3.4$).

PROCESSING AND SUBDIVISIONS: Although returned as one piece, from which ,1 was chipped to produce thin sections ,3 and ,4, 62275 has disintegrated into numerous pieces and powder (Fig. 4).

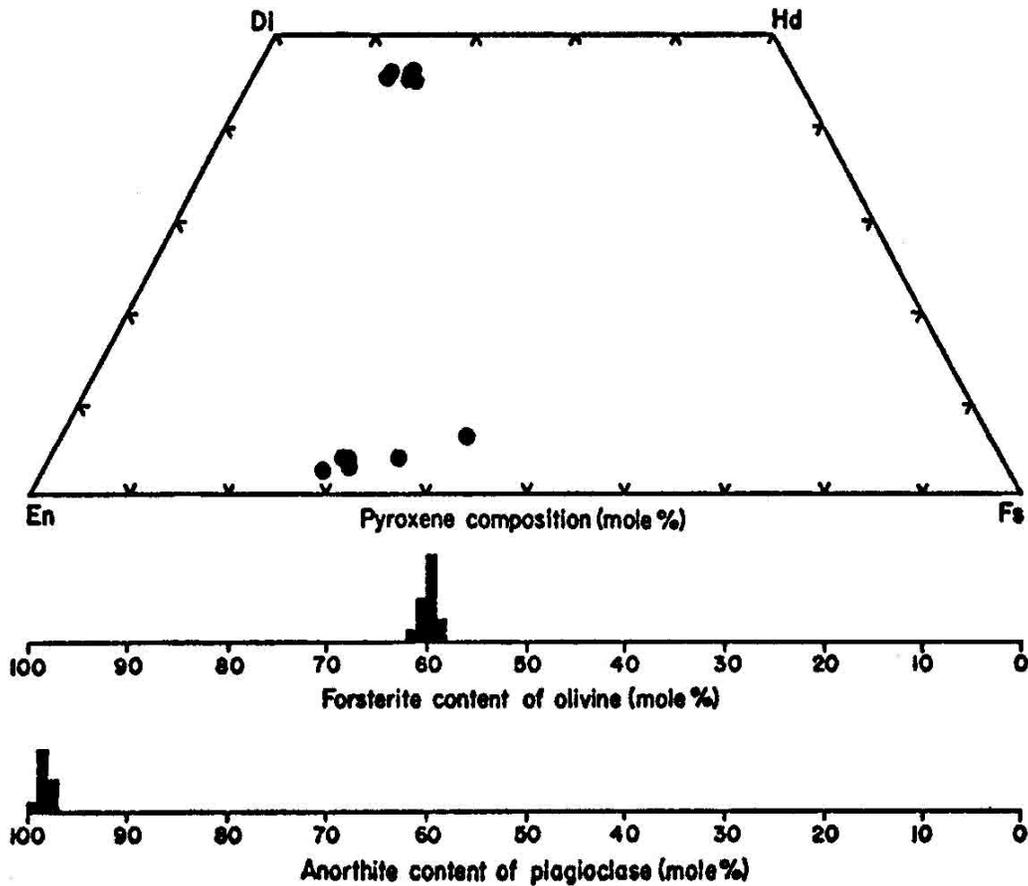


FIGURE 3. Mineral compositions; R. Warner et al. (1976b).

TABLE 1. Mode of 62275 (Prinz et al., 1973).

	<u>vol %</u>
feldspathic glass and plagioclase	93
olivine	6
orthopyroxene	1
clinopyroxene	tr
chromite	tr

TABLE 2. Summary chemistry of 62275 (DBAs from Prinz et al., 1973).

	<u>Bulk Rock</u>	<u>Brownish clasts</u>
SiO ₂	43.7	44.3
TiO ₂	0.04	0.13
Al ₂ O ₃	33.1	30.2
Cr ₂ O ₃	0.29	0.06
FeO	2.20	3.4
MnO	<0.01	0.04
MgO	1.91	3.1
CaO	18.4	18.6
Na ₂ O	0.30	0.34
K ₂ O	0.06	0.03
P ₂ O ₅		

Oxides in wt%



FIGURE 4. Most of 62275,0. Largest piece is about 5 cm across.