63598 VESICULAR POIKILITIC IMPACT MELT 12.66 g

INTRODUCTION: 63598 is a porous, coherent, gray impact melt (Fig. 1) with a fine-grained poikilitic to subophitic texture. It is a rake sample with a few zap pits.

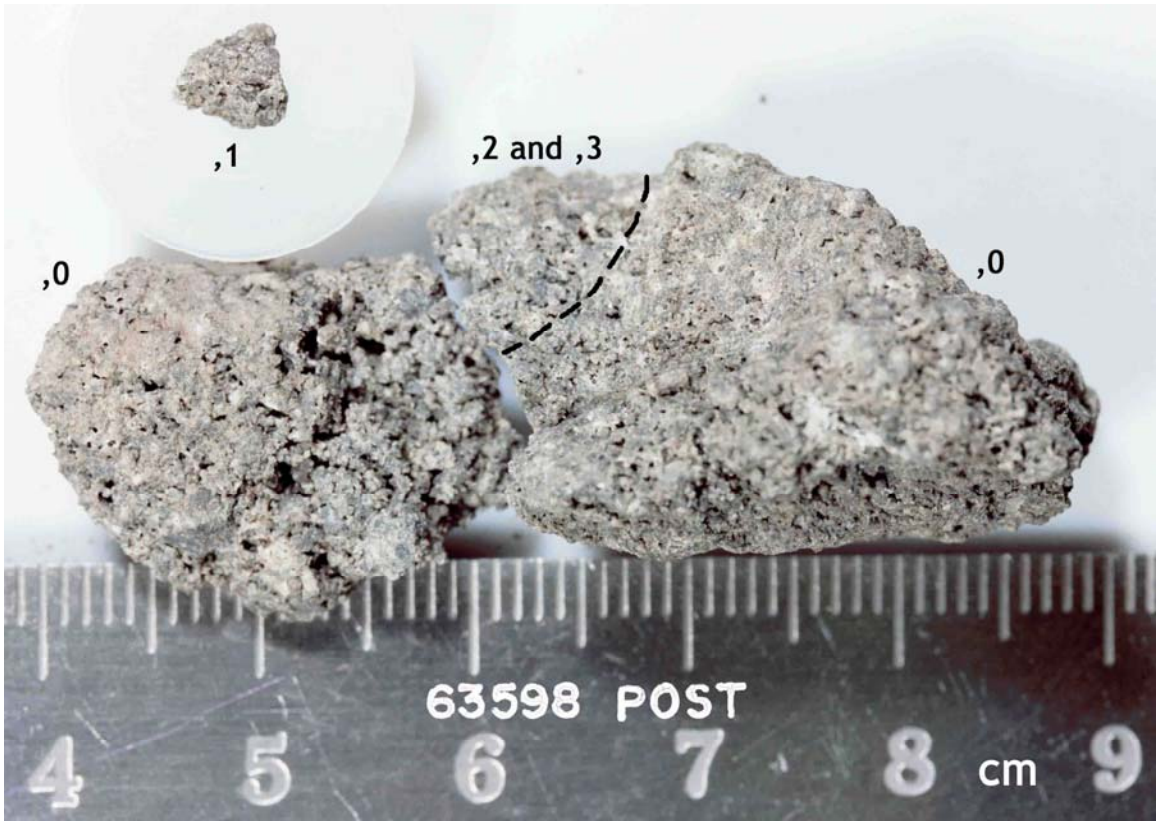

FIGURE 1. S-72-55399.

PETROLOGY: Warner et al. (1973) classify 63598 as a micro-norite type mafic basalt and provide microprobe data. Floran et al. (1976) classify it generally as an impact melt, and specifically as a microcrystalline matrix breccia.

63598 is an extremely vesicular impact melt with a dominantly poikilitic texture (Fig. 2) which in places grades into a subophitic texture. Pyroxene oikocrysts are ~100 μm in diameter (although Warner et al., 1973, state that pyroxene occurs as 20 x 30 μm prisms) which enclose smaller plagioclase crystals. Pyroxene and olivine analyses from Warner et al. (1973) are shown in Figure 3. Unlike most of the basaltic impact melt samples and like poikilitic melt samples, pyroxene analyses do not form a continuum from low-Ca to

high-Ca varieties. Fe-metal and ilmenite laths (with exsolved rutile and chromite (?)) are present. Most clasts are plagioclase, but olivine (Fig. 3) and lithic relics are present.

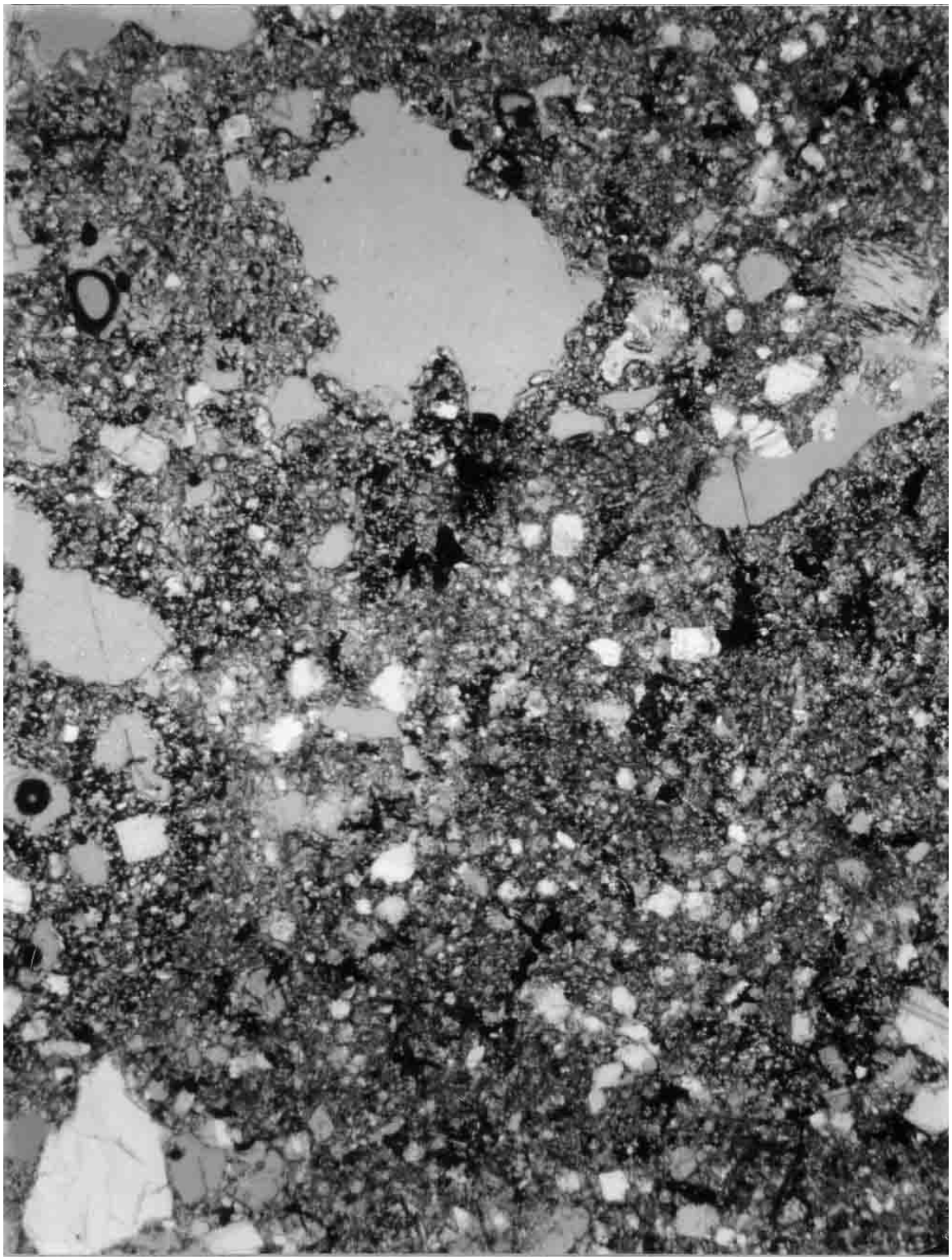

FIGURE 2. 63598,4, general view, ppl. Width 2 mm.

CHEMISTRY: The summary chemistry presented in Table 1 and Figure 4 is taken from the major element analysis by Floran et al. (1976) and trace element analyses by Blanchard (unpublished). The sample is clearly meteorite contaminated.

PHYSICAL PROPERTIES: Pearce and Simonds (1974) present magnetic parameters measured on the potted butt from ,1. The ratio of saturation remanence/saturation magnetization is 0.002. Fe^0/Fe^{2+} is 0.100 and total Fe^0 is 0.57 wt%.

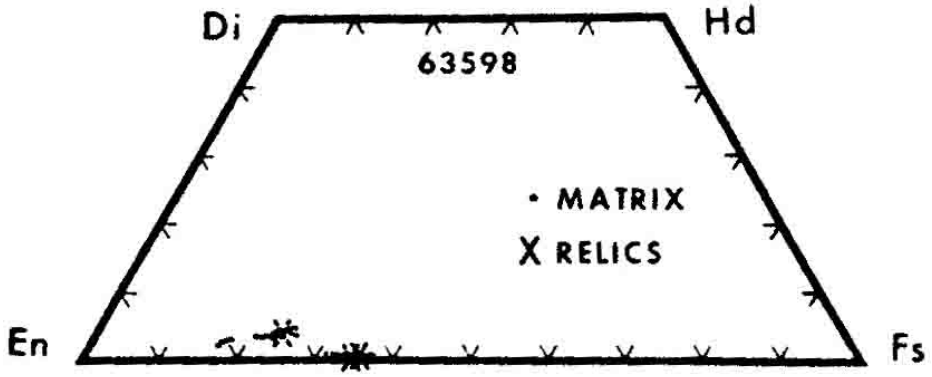

FIGURE 3. Mafic mineral compositions, olivine plotted along base, from Warner et al. (1973).

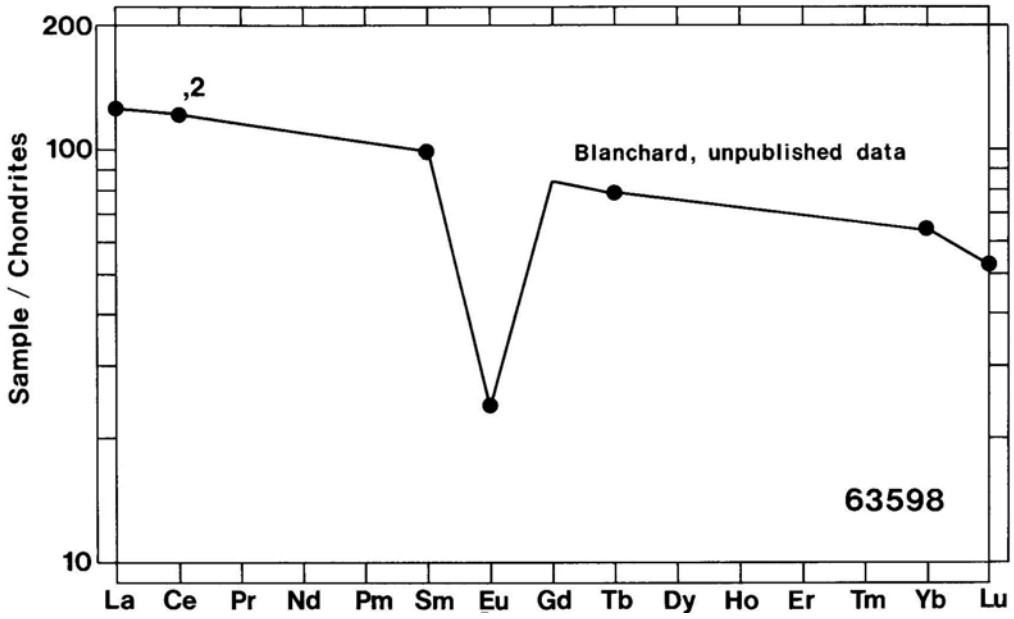

FIGURE 4. Rare earths.

PROCESSING AND SUBDIVISIONS: The main splits are shown on Figure 1. ,1 was used to make thin sections ,6 and ,7. The chemical analyses were made on chip ,2.

TABLE 1. Summary chemistry of 63598.

SiO_2	47.0
TiO_2	0.93
Al_2O_3	22.5
Cr_2O_3	0.14
FeO	7.1
MnO	
MgO	8.1
CaO	13.3
Na_2O	0.57
K_2O	0.31
P_2O_5	
Sr	
La	41.7
Lu	1.79
Rb	
Sc	
Ni	530
Co	36.7
Ir ppb	
Au ppb	
C	
N	
S	
Zn	30
Cu	

Oxides in wt%; others in ppm except as noted