

**63597 - 5.7 grams**  
**63598 - 12.7 grams**  
**Vesicular Impact Melt**

**Introduction**

63597 and 63598 are extremely porous poikilitic impact melt breccias from station 13 on the flank of North Ray Crater – see section on 63501. They are similar in mineralogy and chemistry to the other poikilitic impact melts, except for the extreme vesicularity (figure 1 and 2).

**Petrography**

Mafic pyroxene oikocrysts enclose numerous fragments of plagioclase and some lithic fragments (yes, these are breccias). Pyroxene compositions were determined by Warner et al. (1973). Hunter and Taylor (1981) reported rust in 63598, but not in 63597.

**Chemistry**

Floran et al. (1973) and McKinley et al. (1983) reported the composition of 63598 and Stoffler et al. (1985) reported analyses of 63597. According to Ryder and Norman (1980), Ni is high.

**Other Studies**

For some unknown reason, Pearce and Simonds (1974) studied the magnetic properties.

**Processing**

There are 2 thin section of 63597 and 3 thin sections of 63598.



*Figure 1: Photo of 63598. Same is 3 cm. S80-34089.*



*Figure 2: Photo of 63597. Cm.mm scale. S80-37423*

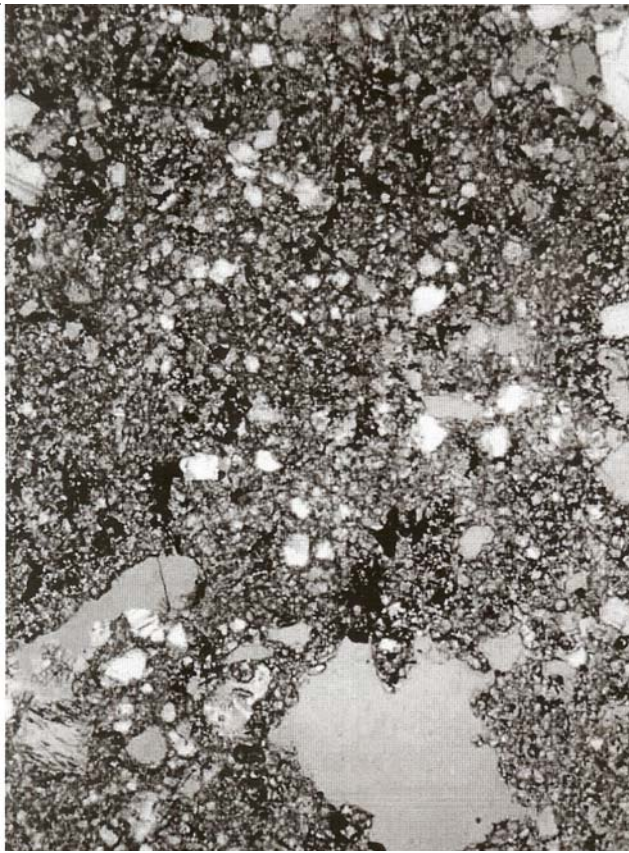


Figure 3: Photomicrograph of thin section 63598,4. Width of field is 1.5 mm. From Ryder and Norman 1980.

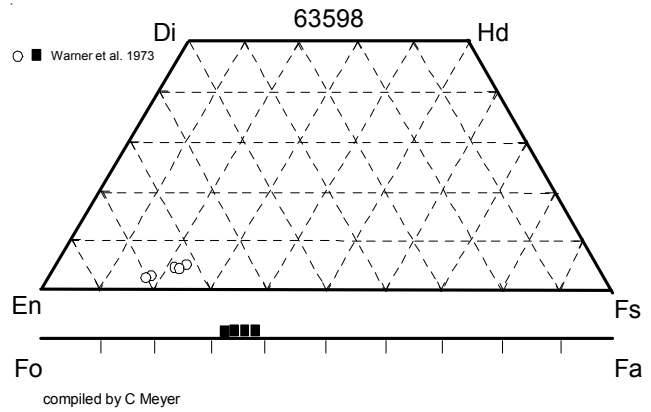


Figure 4: Pyroxene and olivine composition of 63598 (from Warner et al. 1973).

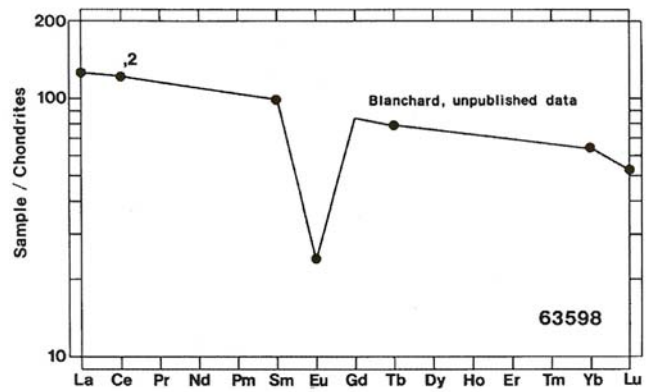


Figure 5: REE pattern from unpublished data.

Table 1. Chemical composition of 63597

reference weight	Stoffler86
SiO <sub>2</sub> %	45.5 (a)
TiO <sub>2</sub>	0.45 (a)
Al <sub>2</sub> O <sub>3</sub>	27.4 (a)
FeO	3.6 (a)
MnO	0.04 (a)
MgO	5.2 (a)
CaO	17.1 (a)
Na <sub>2</sub> O	0.3 (a)
K <sub>2</sub> O	0.1 (a)
P <sub>2</sub> O <sub>5</sub>	0.12 (a)
S %	
sum	

(a) broad beam e probe

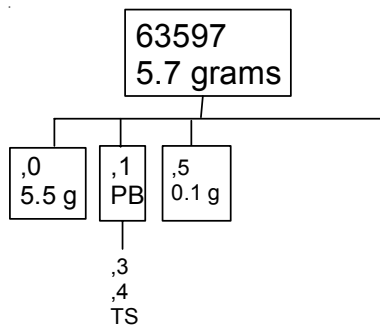
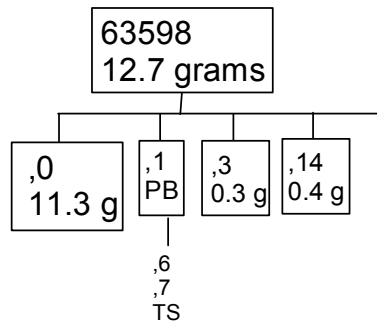


Table 2. Chemical composition of 63598

reference weight	Floran76	McKinley83
SiO <sub>2</sub> %	47 (a)	46.8 (a)
TiO <sub>2</sub>	0.93 (a)	0.92 (a)
Al <sub>2</sub> O <sub>3</sub>	22.54 (a)	22.4 (a)
FeO	7.14 (a)	7.1 (a)
MnO		
MgO	8.12 (a)	8.07 (a)
CaO	13.29 (a)	13.2 (a)
Na <sub>2</sub> O	0.57 (a)	0.57 (a)
K <sub>2</sub> O	0.31 (a)	0.31 (a)
P <sub>2</sub> O <sub>5</sub>		
S %		
sum		

(a) fused bead e probe



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