

MINERALOGY AND PETROLOGY OF THE MARE BASALT-RICH BRECCIA MET 01210.

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Introduction: Meteorite Hills (MET) 01210 was announced as a 22.8 g anorthositic breccia, based on examination of one thin section [1]. Subsequent studies [2-6] have revealed the presence of many basaltic lithologies in addition to anorthositic. In some cases, basalt dominates by a 3:1 ratio (e.g., [4]). We have undertaken a petrographic study of MET 01210, and compare our results to other sections, thus giving a more comprehensive view of this interesting piece of the Moon.

Petrography and mineralogy: The section studied (34) contains ten large clasts (> 500 μm), including five coarse-grained gabbros, two fine-grained feldspathic, two fine-grained basaltic (Fig. 1), and one symplectitic textured lithic clasts. Also present are numerous finer (< 500 μm) grained single mineral fragments, including many (5) large silica grains. Clasts make up approximately 15% of the mode, whereas the balance is made of either the finer mineral and lithic fragments and/or glassy matrix. Given this mixture of clast material and similar ratios apparent among the finer materials, this section also is consistent with a "mingled" breccia, as suggested by [6].

Discussion: The diverse clast types indicate an origin from a region that is proximal to both deep units such as the coarse grained gabbros and the fayalite-hedenbergite symplectites (also consistent with fine, extensive exsolution lamellae, [5]), and shallower units as the finer grained basaltic and anorthositic clasts. It is most similar in petrography to other mingled breccias such as Asuka 881757/Yamato 793169 (also noted by [3]).

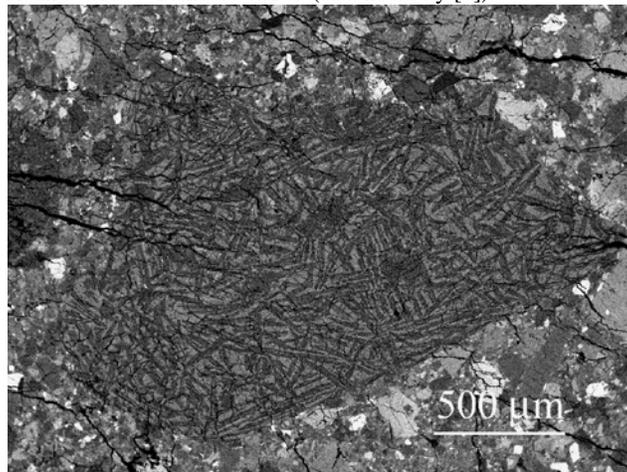


Figure 1: Melt clast containing laths of nearly pure anorthitic plagioclase (dark) in a glassy matrix of basaltic composition (lighter). Width is 2.0 mm.

References: [1] Satterwhite, et al. 2004. *Ant. Met. Newsl.*, 27(1). [2] Patchen A. D. et al. 2005. Abstract #1411. 36th Lunar & Planet. Sci. Conf. [3] Arai T. et al. 2005. Abstract #2361. 36th Lunar & Planet. Sci. Conf. [4] Zeigler R. A. et al. 2005. Abstract #2385. 36th Lunar & Planetary Planet. Sci. Conf. [5] Huber H. and Warren, P.H. 2005. Abstract #3512. 36th Lunar & Planet. Sci. Conf. [6] Korotev R.L. and Irving, A.J. 2005. Abstract #1220. 36th Lunar & Planet. Sci. Conf.