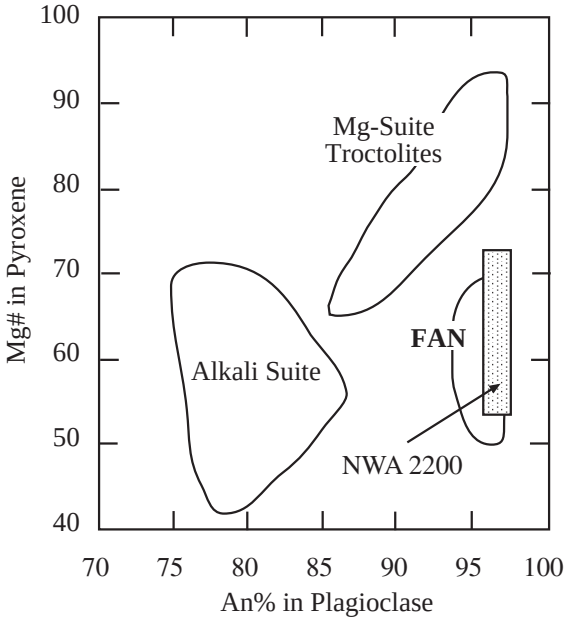
LUNAR FELDSPATHIC METEORITE NWA 2200; A POLYMICT GLASSY IMPACT-MELT BRECCIA WITH FERROAN ANORTHOSITE (FAN) AFFINITIES. S. M. Kuehner[1], A. J. Irving[1] and D. A. Gregory[2]. [1]Dept. of Earth & Space Sciences, University of Washington, Seattle, WA 98195 kuehner@u.washington.edu, [2]St. Thomas, Ontario, Canada.

Introduction: A completely crusted 552 g ellipsoidal stone found in the Atlas Mountains, Morocco in 2004 consists of relatively large lithic and mineral clasts in a darker, very fine grained to glassy matrix. Sparse lithic clasts are mainly fine grained, feldspathic rocks containing equant grains of pyroxene and/or olivine from probable anorthositic to gabboic precursors. A small percentage of the clasts are ophitic or quench-textured mare basalts. Mineral clasts identified by EDS include anorthitic plagioclase, olivine (~Fa_{30-60}), exsolved pigeonite, clinopyroxene, irregular grains of metal (with ~10-45 wt.% Ni), Ti-rich chromite, Ti-poor chromite, pyroxene-like glass(?) fragments, schreibersite (~5 wt.% Ni), ilmenite, troilite and zirconolite. FeO/MnO ratios measured by WDS for olivine (99.7, 105.5), clinopyroxene (73.7) and orthopyroxene (65.4) are unmistakably within the ranges for these minerals in known lunar rocks.

Mineral Compositions: Clinopyroxene and orthopyroxene grains in mineral and lithic clasts have 100Fe/(Fe+Mg) = 25.8-48.2. Nineteen of 23 analyses have Ti/(Ti+Cr) = 0.53-0.75 and overlap the boundary defined by pyroxenes from highlands and high Ti-basalts on the summary diagram of [1]. The compositions of the other five pyroxenes suggest derivation from mare lithologies. Feldspar grains analyzed in mineral and lithic clasts have a narrow compositional range of 100Ca/(Ca+Na+K) = 95.8-97.4. This combination of An-rich feldspars and relatively Fe-rich pyroxenes (Figure 1, [2]) demonstrates that most clasts are derived from ferroan anorthosite (FAN) lithologies.



References: [1] Kuehner, S. et al., 2005. LPS XXXVI #1228. [2] Shervais, J. and Snow, C. 2002. LPS XXXIII, #1029.