COMPARISON OF ANHYDROUS MINERALS OF CONCORDIA AND CAP-PRUDHOMME ANTARCTIC MICROMETEORITES. PREDICTIONS FOR WILD-2 COMETARY PARTICLES.

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Introduction: We compare the abundance and composition of anhydrous minerals in Cap Prud'homme Antarctic micrometeorites (CP-AMMs) with that of Concordia-Dome C AMMs (DC-AMMs, see [1]) to investigate the prediction of a possible link between cometary matter and AMMs [2].

![Graph showing CaO vs FeO plot](image)

**Results and discussion:** On this CaO vs FeO plot, the olivines found in CM2 chondrites show two distinct clusters with FeO < 5 wt% and CaO up to 0.7 wt%, and 27 < FeO < 33 wt%, respectively, which are connected by a sparsely populated gap. The distribution of FeO contents in CP-AMMs shows the same clusters with a more densely populated gap. Although the statistics for DC-AMM olivines is limited, there is a hint that the distribution of their FeO contents is comparable to that of CP-AMM olivines.

The pyroxene/olivine abundance ratio in CP-AMMs is about 1 (i.e., 165 pyroxenes for 179 olivines) whereas it reaches about 3 (38 pyroxenes for 12 olivines) in the DC collection. The ratio of 1 found for CP-AMMs was already much higher than that found in CM chondrites and was compared to that observed in CR chondrites [3]. The higher value found in the DC-AMMs is possibly related to the new population of friable grains found in this collection [4].

It will be interesting to check how the characteristics of olivine and pyroxene grains in anhydrous IDPs and in Wild 2 particles returned by Stardust will compare with that of CP- of DC-AMMs. All these olivines might originate from a common locale in the early solar nebula. They were possibly generated during the collisional fragmentation and/or abrasion of chondrules in the hot inner solar system. Then, only the finest fragments could be fired on ballistic trajectory, by x-wind [5], to the distant and cold formation regions of cometary ices.