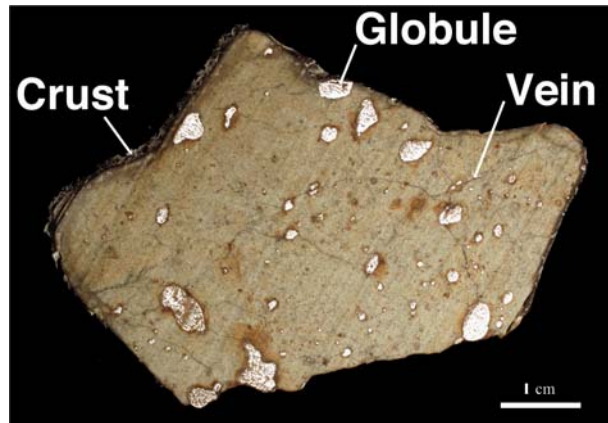


SAHARA 03500: A UNIQUE ACHONDRITE. Albert JAMBON¹ and Bertrand DEVOUARD^{2,3} ¹Laboratoire MAGIE, Université P. et M. Curie, Paris. ²UFR des Sciences de la Terre, Université P. et M. Curie, Paris. ³Laboratoire Magmas et Volcans, UMR 6524, Clermont-Ferrand, France. jambon@ccr.jussieu.fr

SAHARA 03500 collected in march 2003, is a single stone of 221 g. A nice greenish crust is preserved on one side. Centimetric to micrometric globules of sulfide and metal (about 6 vol. %) are dispersed in a light fine grained silicate matrix. A few fine dark shock veins crosscut the rock.



Mineralogy: The silicate matrix exhibits a magmatic texture with subhedral olivine (Fo70, 40 vol. %) and Pigeonite (En66-Fs30-Wo4, 25 %) rimmed by augite (En43-Fs22-Wo35, 13 %) surrounded by interstitial glass of nearly feldspathic composition (13%). The largest globules contain dendritic kamacite (2%) surrounded by pyrrhotite (4%). In smaller globules, sulfide is peripheral with metal exsolved as fine dendrites; a core of metal contains dominant kamacite with fine winding exsolutions of taenite and globular schreibersite. Some parts of the section appear severely brecciated..

Chemistry: Bulk chemical analysis indicate a nearly chondritic composition close to LL chondrites with significant differences though. The K/Na ratio is about 8 times CI. The REE pattern is slightly enriched in light REE while the heavy REE are flat. The Fe/Ni/Co ratios and abundances indicate clearly that the rock has lost a significant siderophile component.

Conclusions: SAH 03500 is a primitive achondrite marginally differentiated from a chondritic precursor.. It probably suffered significant impact melting and rapid cooling at the surface of a chondritic asteroid.