HAMMADAH AL HAMRA 180

Unequilibrated Chondrite, Type 3.5

Found April 1996
28° 36.21' N., 13° 18.04' E.

Six pieces of this highly unequilibrated meteorite were recovered in the Libyan Sahara for a total weight of 936 g. The oxygen isotope plot for HaH 180 places its formation near the enstatite chondrites, but its mineralogy, consisting of olivine and Fe-rich pyroxene, excludes such a relationship. This meteorite is very weakly shocked to stage S2 and highly weathered to grade W4.

Studies of the bulk chemical and mineral composition and petrographic features of both HaH 180 and the similar Deakin 001, suggest an affinity to LL-group chondrites. The anomalously high 18O compositions could be explained by unusually high terrestrial weathering effects, or that these unequilibrated ordinary chondrites sample a wider range of oxygen isotope compositions than previously identified. Otherwise, these meteorites may be unique chondritic specimens. The above specimen is a 5.5 g cut fragment showing a characteristic large, rounded, dark-rimmed, lithic clast. Below is an in situ photo of HaH 180, its persistent dark appearance belying a long terrestrial residence. A high-resolution photo of a 7.73 g full slice of one of the smaller fragments is an exquisite sight.