

## **METEORITES FROM THE DESERTS: SAMPLING THE ENVIRONMENTS**

Jagoutz E. , B. Spettel and G. Dreibus. Max Planck Institut fuer Chemie.  
Saarstrasse 23 Mainz 55122 Germany

Many meteorites have been collected recently from the Antarctic ice, but an increasing number of meteorites are now also being collected in deserts. Pristine meteorites are classified according to their chemical composition, texture, and redox conditions. However, the alteration of desert meteorites by terrestrial environment begins practically instantaneously after their fall. The time of fall indicated by the terrestrial residence age is measured using cosmonuclides. Dar al Gani 476, an SNC meteorite found in the Libyan desert, has a terrestrial residence age of 70.000 years. The alteration products within this meteorite are mainly carbonates, which have Sr and Nd isotopes similar to oceanic water. Sand, collected from the same place where the meteorite was found, has Sr and Nd isotopic composition in the range of orogenic sediments and quite distinct from oceanic waters. Thus, we can assume that Dar al Gani 476 fell into oceanic water transgressing the Libyan dessert 70 000 years ago or this area was exposed to seespray. Additionally, we leached the sand using 2N HCl acid, mainly extracting surface caliche. The Sr and Nd isotopic composition of the dissolved caliche is also close to oceanic water indicating that some evaporates still have the signature of oceanic water. Lakes can largely be excluded since the isotopic composition of lake water would be dominated by runoff waters and bare on isotopic composition are similar to the young continental crust. Considering the number of meteorites found in desert such studies might be able contribute constrains to environmental geochemical evolution.