

**THE LARGEST PARENT BODY OF THEM ALL. M. Javoy. mja@ipgp.jussieu.fr**

A recent paper states that : "establishing connections between meteorites and their parent asteroids "is an important goal of planetary science".. (Icarus, 200-2 698-701, 2008). Let us take that for granted. Ways to achieve that goal are multiple : optical, spectroscopical, computational. One may try to imagine how the situation would change if we could add precise chemical, mineralogical, and isotopic tools to fulfill that goal.

From the time of its discovery, oxygen isotope identity between the Earth's Mantle and the Enstatite Chondrite group has been dismissed as a tool for finding Bulk Earth chemical composition, because ECs are, depending on the author : too rich in Si (too poor in Mg, RLE, in RLE vs Mg...), too rich in volatiles, too rich in Fe, too reduced, all that together....

With a continuously growing isotopic evidence of consanguinity between the Earth and the E chondrite group, some opponents, while still firmly opposed to the idea of an E chondrite Earth, have made, at least orally, a concession that left me bewildering : the Earth can definitely not be made of Enstatite Chondrite material, but Enstatite Chondrites can come from the Earth! Better than nothing. Let us take it positively.

With that perspective in mind we have tried, and succeeded, to model the composition of all found (and to be found) Enstatite chondrites, as mixtures in variable proportions of silicate, sulfide and metal phases, whose average composition and compositional range can be found from the wealth of chemical studies of the literature. If Bulk Earth composition is one of these compositions, it must :

1- be much more representative of their average composition than the meager left overs now residing in the, itself very small, mass of the asteroid belt.

2- be compatible with simple facts such as : the size of the Core, the mechanism of its differentiation, and its light element content.

The result is that the most probable initial average E chondrite composition lies in the EH field, close to Abee's bulk composition, or, to take a more recent example and a more precise evaluation a mixture of 75% Abee with 25% Itqiy.