PHYSICAL PROPERTIES OF PRIMITIVE ASTEROIDS

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The progenitor asteroids of the different carbonaceous chondrites' groups were initially highly porous, but this microporosity decreased with time as consequence of internal heating, collisional compaction and aqueous alteration affected their primeval physico-chemical properties. This picture is fully consistent with recent laboratory experiments and microscopic and mineralogic studies. Most of the water was probably incorporated into the inner structure of the parent asteroids as ice, although some phyllosilicates would be have present in the nebula. However, there is growing evidence that most of the phyllosilicates present in these meteorites were formed into the parent asteroids. The low degrees of metamorphism experienced by these primitive asteroids is also shown by the mineral phases present in these rocks ($T < 1200C$). However, their texture suggest that many of them experienced compaction, brecciation, and shear, induced by impacts.