

Interactive comment on “Comets, carbonaceous meteorites, and the origin of the biosphere” by R. B. Hoover

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You write "The “dirty snowball” model that was first advanced by Fred Whipple (1950, 5 1951) remains the dominant paradigm concerning the structure of the comet nucleus (Whipple, 1963).

In conclusion: These results indicate that the Whipple “dirty snowball” paradigm may require revision."

The "paradigm" was hit hard by the comet Halley probes, showing a very black and hot surface, dusty jets and a substantial fraction of carbon compounds.

Since 1986 the 'dirty snowball' has persisted as a model, even the most favoured of competing models, but none merits the status of "paradigm".

We predicted that 'Deep Impact' into Tempel-1 would smash the icy-conglomerate

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model (www.astrobiology.cf.ac.uk) and so it did.

So this paper comes far too late to "indicate" revision of an already smashed up paradigm, even if that were part of its intention.

You also conclude: "The presence of microfossils in carbonaceous meteorites suggests that the fundamental paradigm that life originated endogenously in the primitive oceans of early Earth may require careful reconsideration."

I'd say the paradigm is that life originated on Earth, probably in limited size lakes (warm pools) maybe even earlier ($> \sim 4$ Gyr) than the majority of terrestrial water arrived. But why not talk straight?

... (good) evidence that carbonaceous chondrites (CCs) originate in comets and indicate that water is at times present in them

... microfossils in CCs imply that the parent body (comets) sustained primitive life

... whether that life originated on Earth and infected the comet (or vice versa) is not an issue that this paper addresses.

Interactive comment on Biogeosciences Discussions, 3, 23, 2006.

BGD

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