

Article: Deep Impact collision ejected the stuff of life

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Deep Impact collision ejected the stuff of life
13:10 07 September 2005
Maggie McKee

Millions of kilograms of fine dust particles and water and a "surprisingly high" amount of organic molecules sprayed into space when NASA crashed its Deep Impact spacecraft into Comet 9P/Tempel 1 on 4 July 2005, reveal a trio of new studies.

The observations bolster theories that comets may have seeded Earth with the raw materials for life and suggest they may be sponge-like – rather than hardened – at their cores.

On 4 July, about 80 telescopes on Earth and in space trained their sights on Comet Tempel 1 when a 370-kilogram copper impactor was sent hurtling into its path. Just after the smash, a bright vapour plume spewed from the surface at about 5 kilometres per second, followed quickly by a stream of particles that spread into a cone.

The cone appeared to remain attached to the comet's surface for about 22 hours before separating into a detached arc. Researchers used this gravitational attraction to estimate the mass and density of the comet's main body, or nucleus. They found that the 72 trillion kilogram-nucleus was extremely porous, with as much as 80% of its volume taken up by empty space.

"That tells me there is no solid layer all the way down to the centre," says Mike A'Hearn, the mission's principal investigator at the University of Maryland in College Park, US. He says he had expected that the ice might become denser towards the core of the nucleus, but that instead "probably all the way in, ice is all in the form of tiny grains".

Full Text at NewScience
<http://www.newscientist.com/article.ns?id=dn7961>

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"This supports theories that comets may have brought water and the building blocks of life to Earth, and the team hopes to eventually identify all the

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species comets brought in abundance to early Earth', says A'Hearn."

Posted by
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