

Deep Impact data won't make a dent, scientist says

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NASA's Deep Impact mission will only prove what scientists think they already know about the birth of the solar system, says one University of Missouri-Rolla researcher.

The July 4 "comet shot" is expected to yield data dating back 4.5 billion years, when most scientists believe the solar system was formed out of an interstellar cloud of gas and dust. Since the frozen interiors of comets are thought to possess information from that time, it is believed we can learn more about the original cloud of gas and dust by sending a projectile into the core of a passing comet.

Not so, says Dr. Oliver Manuel, professor of nuclear chemistry at UMR.

"Comets travel in and out of the solar system, toward the sun and away from the sun, losing and gaining material," Manuel explains. "But the building blocks that made the outer parts of the solar system are different from the building blocks that made the inner solar system."

For the record, Manuel believes the sun was born in a catastrophic supernova explosion and not in a slowly evolving cloud of space stuff. According to Manuel's model, heavy elements from the interior of the supernova created the rocky planets and the sun; and the lighter elements near the surface of the supernova created the outer, gaseous planets.

Therefore, Manuel says, data from Deep Impact won't be useful.

"The comet data will show a mixture of material from the inner and outer layers of the supernova, but it won't tell us anything about the beginnings of the solar system," Manuel says. "NASA still says the solar system was born in an interstellar cloud and that the sun is a ball of hydrogen with a well-behaved hydrogen fusion reactor in the middle of it. But it's not, and that will color the data from

Deep Impact. It will appear to confirm a flawed theory about the birth of the solar system."

Manuel says the sun is the remains of a supernova, and that it has a neutron star at its core. According to a paper he presented last week at a nuclear research facility in Dubna, Russia, neutron emissions represent the greatest power source ever known, triggering hydrogen fusion in the sun, generating an enormous magnetic field, explaining phenomena like solar flares and causing climate change on earth.

Findings published by other researchers last year in *Science* magazine (May 21, 2004) suggested that, in fact, a nearby supernova probably did contribute material (Iron-60) to an ambiguous cloud that formed the solar system. What Manuel reported 27 years earlier in *Science* (Jan. 14, 1977) is that the supernova blast created the entire solar system and all of its iron.

"So Deep Impact is NASA's big cosmic fireworks show for the Fourth of July, but they're going to end up using smoke and mirrors to help validate this theory about a big cloud of dust that supposedly made the solar system," Manuel says.

Source: [University of Missouri-Rolla](http://www.phys.org)

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