

Researchers suggest comet most likely cause of Chicxulub crater

March 25 2013, by Bob Yirka



The 'Great Comet' of 1996, Hyakutake. Image credit: NASA

(Phys.org) —Researchers from Dartmouth College in the U.S. as part of their presentation at the *44th Lunar and Planetary Science Conference* this past week, have given evidence that suggests it was a comet that struck the Earth approximately 65 million years ago creating the Chicxulub crater—an event most scientists agree was likely the cause behind the demise of land dwelling dinosaurs. Up till now most in the field have believed that it was likely an asteroid that caused the crater and disruption that followed.

The 180 km wide [Chicxulub crater](#) exists in the ocean near the [Yucatan peninsula](#) in Mexico, it was first discovered in 1978 and since that time,

a lot of research has been undertaken to determine if what caused it was what caused the dinosaurs to go extinct. Researchers found that a layer of iridium was formed over the Earth's surface as a result of the explosive impact—so great was it, that much of its mass was thrown back up into the atmosphere all across the globe. The layer, known as the Cretaceous-[Paleogene](#) (K-Pg) boundary has been the source of a lot of debate. In this new effort, the team suggests that as much as 75 percent of the object that struck the Earth wound up in the atmosphere and eventually fell to the ground.

Measuring the thickness of the K-Pg boundary allows scientists to calculate the size of the object, and in this case, the researchers say there isn't enough material to support the notion of an [asteroid strike](#)—because they, as a rule, tend to move much less slowly than comets. A fast moving, but much smaller comet, they say, could very easily account for both the amount of iridium and the large crater size. The group has based their assertions on new research into the levels of [osmium](#) that is also found in the K-Pg boundary, but in smaller amounts. It's enough they say, to suggest that more of the object that struck the Earth wound up in the atmosphere than has been previously thought, which means the likelihood of it being from an asteroid impact is not supported.

This new research comes just a month after another team published a paper [suggesting it was binary asteroids](#) that caused the Chicxulub crater.

The researchers acknowledge that their findings can't prove that the object that struck the Earth was a comet (some of the debris might have gone back into space, etc.), but it does offer compelling evidence, which has some space scientists worried—there are far more such comets in our solar system than asteroids. If another comet were to strike, we now have a pretty good picture of what that would entail.

More information: www.lpi.usra.edu/meetings/lpsc2013/

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