Ancient asteroid impact coated Earth in beads

Event linked to dinosaurs' demise, pulverized planet's crust

By Jeanna Bryner
Tues., May. 6, 2008

The asteroid linked to dinosaurs' demise 65 million years ago slammed into the Yucatan Peninsula with such force it pulverized Earth's crust. The result was a veil of airborne carbon beads that blanketed the planet, a new study finds.

Spanning about 124 miles, the giant indentation left by the asteroid impact continues to be a treasure trove of clues for scientists piecing together the wipe-out of 70 percent of life on Earth, including non-avian dinosaurs. Called the Chicxulub Crater, this CSI-site is located just west of Mexico's Yucatan Peninsula.

Geologists generally agree an asteroid slammed into Earth at the end of the Cretaceous period; that the catastrophic impact sent molten rock and super-hot ash airborne; and that as the molten material fell from the sky, it ignited flammable flora, sparking forest fires.

More perplexing has been the formation of carbon particles called cenospheres hiding out in rocks of the Chicxulub Crater and other sites. One idea was that the carbon beads were charred remnants formed as a result of the plant-burning.

That seemed plausible since, until now, such carbon beads were associated only with modern power plants, and scientists thought intense burning of coal and crude oil generated the structures. Power plants didn't exist 65 million years ago, and even heat produced by pressure from layers of earth deposited atop the dino fossils would not have been sufficient to form the beads.

However, flames were not needed, say the current researchers, who find besides that the combustion of plants wouldn't produce such paleo-beads. Rather than a flammable origin, the carbon beads could have formed from the violent pulverization of the Earth's carbon-rich crust.

Their counter-view, detailed in this month's issue of the journal Geology, comes from analyses of cenospheres within rock samples collected at oceanic and inland locations around the world.

"Carbon embedded in the rocks was vaporized by the impact, eventually forming new carbon structures in the atmosphere," said researcher Simon Brassell, a geologist at Indiana University, Bloomington.

The study was funded by the Geological Society of America, Indiana University, and the Society for Organic Petrology.