NATIONAL MUSEUM of
NATURAL HISTORY
SMITHSONIAN INSTITUTION

June 1997

"BLAST FROM THE PAST" EXHIBIT
BACKGROUNDER

Editor's Note: ***The Press Preview is Friday, June 2 at 10:30 a.m., exhibit open to public that afternoon***

The Smithsonian's National Museum of Natural History presents the best-preserved record yet found of the physical and biological effects of the huge asteroid or comet that struck Earth 65 million years ago at the end of the Cretaceous Period. The evidence is featured in "Blast From the Past," on view June 27 through February 16, 1998.

The exhibit "Blast From the Past," centers on a core sample of layers of sediment taken 420 feet (130 meters) below the ocean floor about 350 miles (480 kilometers) east of Florida. The core documents:

- Life forms in the Atlantic before impact
- The rain of ash and debris during the weeks immediately after the cataclysm
- The slow reappearance of life over the course of thousands of years

The core sample strongly supports many scientists' belief that the asteroid strike led to the extinction of the dinosaurs, and of most other life on Earth as well.

Dr. Brian Huber, a micropaleontologist in the museum's Department of Paleobiology, was a member of the expedition that recovered the core sample. The deepest, earliest section, a soft

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white Cretaceous chalk, grades upward into a layer of coarser, darker material that includes tektites created by the asteroid's impact. The youngest section of the core on view is made up of gray and white muddy chalk from the Tertiary Period. The fireball layer, a rust-colored band of material between the tektite and Tertiary layers, contains actual bits of the asteroid, as well as soot and ash that rained down on Earth's surface for years after the impact.

Also highlighted is Huber's research on foraminifera, single-celled organisms that have lived in marine environments for more than 500 million years. More than 90 percent of the free-floating foraminifera species found in the Cretaceous chalk suffered extinction. These species are larger, and far more diverse and ornate than those found in the Tertiary layer.

A team of researchers representing eight countries from the Ocean Drilling Program (ODP) recovered the core sample, working aboard the *JOIDES Resolution,* the world's largest scientific research ship and the only deep-ocean drilling rig devoted exclusively to scientific exploration. The team drilled 300 to 350 miles (480 to 560 kilometers) east of St. Augustine, Florida. They selected the site on the theory that the geological record there, 1,200 miles east of the asteroid's impact crater on the Yucatan coast, could have survived intact. Even so, Huber and his colleagues were stunned to recover a core so clearly stratified and rich with information.

"Blast From the Past" offers museum visitors a remarkable opportunity to see actual evidence of one of the most pivotal moments in natural history--literally an Earth-shattering event that changed the course of evolution--and to understand how natural scientists interpret that evidence. After the *JOIDES Resolution* drilled a core sample, scientists carefully sliced it lengthwise. Half the core is being used for tests and study; the other half is to be preserved in the

ODP Repository in Germany. At Brian Huber's request, ODP lent the archival sample to the museum, where it is protected from contamination in a nitrogen-filled case. In early 1998, however, the core will be returned to the ODP archive, and replaced in the exhibition by a replica now being created by the museum's Paleo Prep Lab.

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