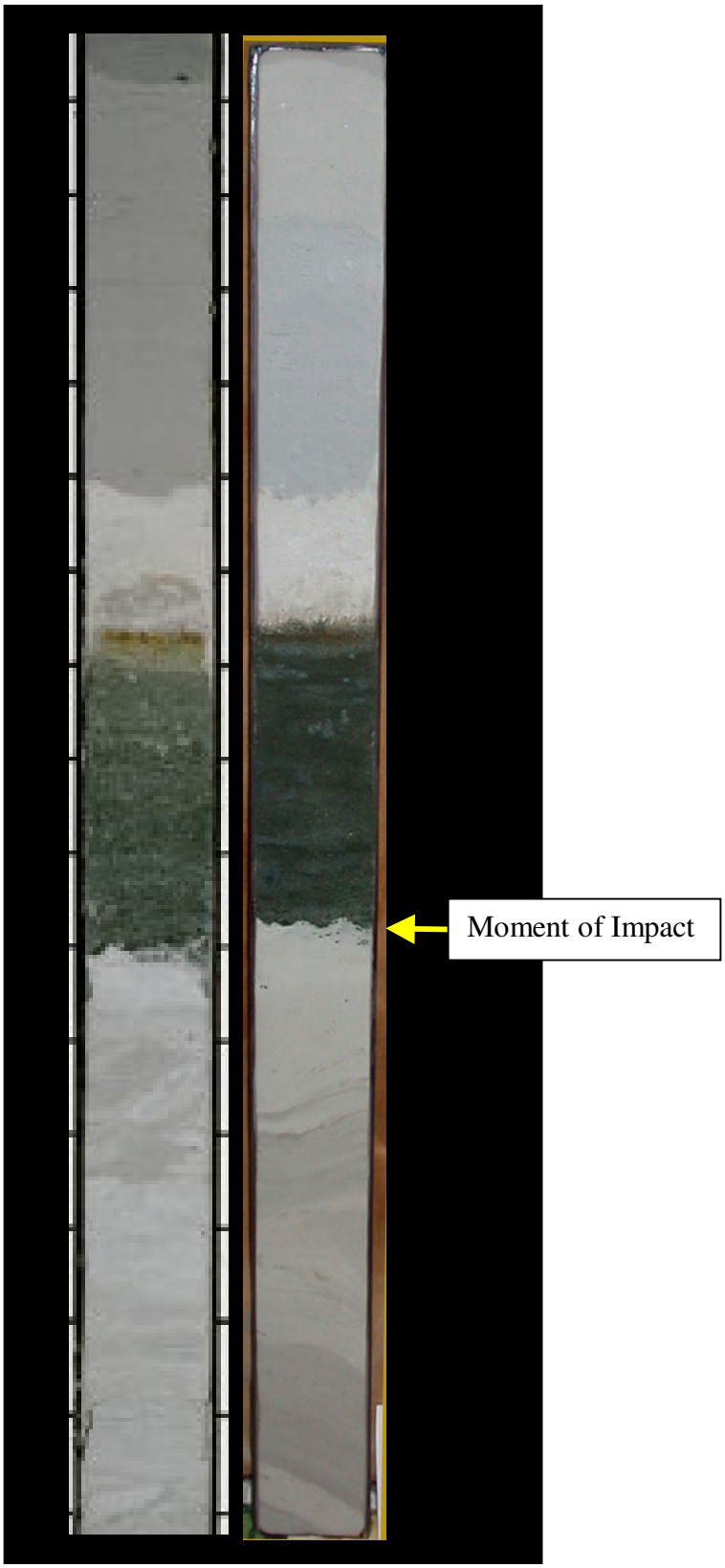
Cretaceous/Tertiary Boundary Core Replica
Integrated Ocean Drilling Program - Leg 171B-1049A-17X-2



Comparison of real core (left) and replica (right).

This replica of a sediment core recovered by the Ocean Drilling Program records the cataclysmic event that changed life on Earth 65 million years ago. The drill ship JOIDES Resolution obtained this core 350 miles east of Florida at a depth of 427 ft (128 meters) below the ocean floor. On that day, an asteroid nearly 10km wide slammed into what is now Mexico's Yucatan Peninsula and blasted debris into the atmosphere. When the dust cloud settled, a 177km wide crater scarred the Earth. A large number of marine and terrestrial creatures became extinct.

The following description is printed on the backside of the replica:

1. After the Impact: Sediment is laminated and slightly bioturbated. Only tiny, less ornate foraminifera microfossils are found in this layer; a few new species have evolved.

2. Fireball Layer: This layer is stained orange due to oxidization of the upper part of the spherule layer. Contains dust and ash fallout from the asteroid impact.

3. Tektite Layer: Ejecta, including tektites – glassy spherules condensed from the hot vapor cloud produced by the asteroid impact – are found in this layer of the core. Debris thrown into the atmosphere by the impact rained down on the Earth for days to months after the event. The impact and ensuing global climatic changes devastated life. In the ocean, 95 percent of the free-floating foraminifera died out. Grades from coarser to finer particles from the bottom to top of layer.

4. Moment of Impact: The irregular surface is the K/T (Cretaceous/Tertiary) Boundary.

5. Before the Impact: The sequence immediately below the K/T unconformity displays microfaults and slump. This layer contains microfossils of the large and ornate foraminifera that flourished in the oceans during the time of the dinosaurs.

Above wording taken from the ODP (Ocean Drilling Program) and JOI (Joint Oceanographic Institutions) sponsored poster on the Leg 171B (1049A-17X-2) core now on display at the Smithsonian Institution, Washington, D.C., USA. This core is part of the ODP/Bremen Core Repository collection, University of Bremen, Germany.