

Cretaceous-Paleogene (K/Pg) Mass Extinction Boundary (65 Ma)

ODP Leg 171B Blake Nose Paleooceanography Transect

January 1997: the drillship *JOIDES Resolution* retrieved sediments from beneath the Atlantic's seafloor 1920 km N from the Chicxulub Crater at a water depth of 2658 m.

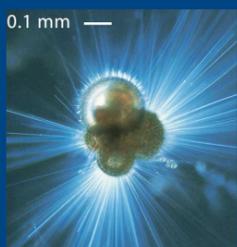


AFTER ———— ○ ———— **IMPACT** ———— ○ ———— BEFORE

Only **tiny, less ornate foraminifera** microfossils are found in this layer

Greenish ejecta layer including **tektites** contains materials blasted from the crater and deposited down on the Earth for days to months after the event.

Microfossils of **large foraminifera** that flourished in the oceans during the time of the dinosaurs are found in this layer.



0.1 mm —

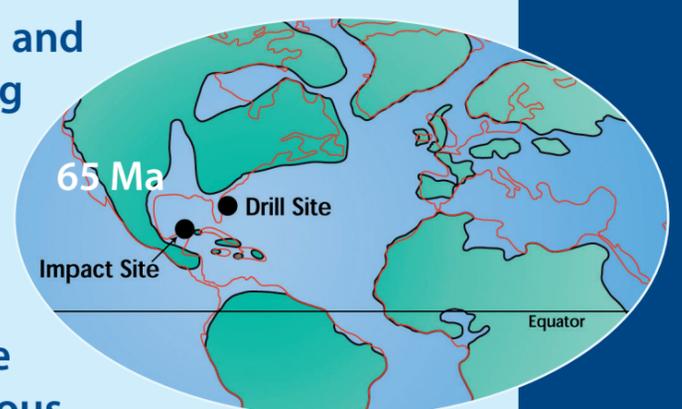
Foraminifera are single-celled organisms, which occur in many different marine environments, from the shoreline to the deep sea, from near the surface to the ocean floor. Their abundance, wide distribution, and sensitivity to environmental variations make them good indicators of past climate change.



Tektites are glassy spherules condensed from the hot vapour cloud produced by the asteroid impact.

0.05 mm —

The greenish layer of sedimentary materials, tektites and asteroid remains, contains by far the most convincing evidence that there was a huge meteorite impact in the region 65 million years ago. The impact and ensuing global climatic changes devastated life. In the ocean, 95 percent of the free-floating foraminifera died out. This asteroid is believed to have brought about the extinction of all the dinosaurs and an estimated 50 to 80% of other Cretaceous species.



Continents at the time of the impact

References: Norris RD, Kroon D, Klaus A et al, 1998. Proc. ODP Intl Repts 171B - doi:10.2973/odp.proc.ir.171B.1998
Blast from the Past-part2" by Brian Huber - <http://paleobiology.si.edu/blastPast/paleoBlast2.html>