

## Plot these historic JOIDES drilling sites!

**Site 1 (25N, 92W) 1968, First Deep Sea Drilling Cruise set sail.** By 1968 the Joint Oceanographic Institutions for Deep Earth Sampling ([JOIDES](#)) had secured long-term funding from the National Science Foundation and leased a custom drillship from Global Marine Development Inc. named [GLOMAR Challenger](#). Using powerful thrusters to stay in one spot even in heavy seas, the ship could lower a drill string through 7 kilometers of water, then drill 1700 meters and more into the sediment and rock of the seabed. For the next 15 years the *Challenger* crisscrossed the seas, making 96 separate voyages or "legs" and drilling at 624 sites on the seafloor. During that time five other nations joined the program.

**Site 14 – 21 (28S, 21W) January 1969**, evidence was found to confirm the theory of seafloor spreading providing new information on the geologic history of the Western Atlantic and Caribbean basins.

**Site 693 (71S, 15W) January – February 1987, Southernmost site explored by scientists.** This trip leg 113 was designed to answer the following questions

1. When did the Antarctic ice-sheets first form, and have they been permanent since formation?
2. When did marine glacial conditions develop sufficiently for the initial formation of cold Antarctic Bottom Water in the Antarctic region, particularly in the Weddell Sea? How have bottom- and intermediate-water temperatures changed in response to Antarctic glacial development?
3. What has been the history of oceanic planktonic productivity in the Weddell Sea sector of the Southern Ocean? How is this development linked to the evolution of Antarctic climates and the oceanic environment, particularly the Polar Front?
4. What has been the evolution of the Antarctic planktonic and benthic biota and their biogeographic patterns? How is this linked with the environmental changes?

**Site 911 (80N, 8E) . July to September 1993 Scientist drill in their northernmost site exploring the history of the Arctic Ocean.** The cruise recovered 3014.2 m of core from seven sites in the Norwegian-Greenland Sea and Arctic Ocean. The sedimentary sections collected were investigated to unravel the history of surface and bottom waters in the Norwegian-Greenland Sea and in the Arctic Ocean. The purpose was to study the origin of the basin, the history of subsidence, and to establish the history of the truly Arctic marine paleoenvironment along a depth transect as well as its interaction with late Cenozoic Arctic ice sheets.

**Site 1049 (30N, 76W) January – February 1997, Scientist uncovered evidence of massive meteorite impact on the Earth 65 million years ago** – The Cretaceous-Tertiary mass extinction, which wiped out the dinosaurs and more than half of species on Earth, was caused by an asteroid colliding with Earth

**Site 1262 - (27 S, 1.5 E) March 2003, Scientists discovered a continuous K/P boundary, 55 million years ago rapid climate change** – during the Cenozoic Era began at the temporal boundary between the Paleocene and Eocene epochs 55.8 million years ago. This time period is associated with rapid (in geological terms) global warming, profound changes in ecosystems, and major perturbations in the carbon cycle. Many benthic foraminifera and terrestrial mammals went extinct, but numerous modern mammalian orders emerged. Global temperatures rose by about 6°C (11°F) over a period of approximately 20,000 years. The water depth at this site is 4759 m.