

# The Arctic Ocean (ARK-XX/3) Expedition into the Yermak Plateau/Fram Strait Area

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The Arctic Ocean Expedition (ARK-XX/3) was carried out with German RV "Polarstern" of the Alfred-Wegener Institute for Polar and Marine Research in August 31 to October 3, 2004. During the last leg of the cruise, 44 scientists from Germany, Russia and Korea intensively investigated the region north and west of Spitsbergen as well as the Fram Strait. The main scientific program of the ARK-XX/3 was focused on geophysical and geological studies of the Yermak Plateau and Fram Strait area. As part of the geology, a bathymetry program was also carried out in order to 1) collect Hydrosweep-DS2 multibeam to improve the bathymetric data coverage in the Yermak Plateau/Fram Strait area and 2) to update the existing bathymetric data sets of the Arctic Ocean, e.g. the

"International Bathymetric Chart of the Arctic Ocean" (IBCAO). In addition, the new seismic data sets will enable us to improve the planning and implementation of scientific deep drilling expeditions to the Fram Strait and Yermak Plateau and the East Greenland Sea within the frame of international drilling program IODP (Integrated Ocean Drilling Program). In particular, this drilling program in the Arctic Ocean will contribute to solving the great mystery of changes in Arctic plate tectonics and paleoclimate during the course of the last 120 Million years. Furthermore, detailed multidisciplinary (i.e., sedimentological, mineralogical, micropaleontological, organic-geochemical, and stable isotope analyses) investigations will be performed on the sediment cores for high-resolution reconstructions of paleoclimate, paleoceanographic circulation patterns, paleosea-ice coverage, and paleoproductivity and their variability during the late Quaternary glacial-interglacial cycles.