The Mapping of the Sea: Terra Incognita on the Globe

The bathymetry of the ocean floor is the key to the geological understanding of the various tectonic and ecological processes in the deep sea. Building on the pioneering work of Marie Tharp, the name given to the lecture series at the GEOMAR Helmholtz Center for Ocean Research Kiel, Germany, Dr Donna Blackman from the Scripps Institution of Oceanography in San Diego, USA, is mapping the seafloor. However, despite her and other people's efforts, only a fraction has been mapped and 90% of the deep sea continues to be 'Terra Incognita'. In her talk at the 18th Marie-Tharp Lecture, she presented her latest results.

Dr Blackman first studied geosciences at the University of Santa Cruz, California, before moving to the renowned Massachusetts Institute of Technology - Woods Hole to obtain her masters degree in marine geophysics. She received her PhD at Brown University in Rhode Island. Through postdoc phases at the universities of Washington and Leeds in the UK, she came to the Scripps Institution of Oceanography. Professor Blackman was able to gain insights into project funding as a contact person with the American research organisation, the National Science Foundation (NSF), before returning to research after five years. Here work centres around tectonic and magmatic processes on spreading ridges and fracture zones, which characterise wide areas of the ocean floor. She uses a whole range of geophysical measuring methods with a special focus on the high-resolution seabed mapping, which she presented in her lecture. Modern mapping methods include, among others, AUVs as those also used at GEOMAR. According to Professor Heidrun Kopp from GEOMAR, detailed maps of the ocean floor are essential for solving fundamental tectonic problems and led to the discovery of active hydrothermal fields with unique ecosystems. She adds that Donna Blackman's work has a long tradition of seabed mapping, which began with Marie Tharp, the name given to the series of seminars.

The Marie Tharp Lecture Series is organised by GEOMAR's Women's Executive Board (WEB). To this end, the WEB invites internationally renowned scientists, who present their scientific work in Kiel, but at the same time serve as a model for young female scientists. As in past lectures, a get-together takes place for these young female scientists following the public lectures. There, young researchers can exchange with more experienced colleagues and discuss possible career paths.