



# **EELCO JOHAN ROHLING**

AUSTRALIAN NATIONAL UNIVERSITY

#### Citation

Dr. Eelco Rohling is a major force in paleoclimatology and paleoceanography who addresses questions about past oceans and climates that are critically important to society and the future of humanity. From early in his career, Rohling recognized the value of analyzing amplified climate signals from the marginal Mediterranean and Red Sea basins. Using oxygen isotope measurements of planktonic foraminifera, he pioneered new methods to develop continuous marginal basin sea level reconstructions. His highly resolved record for the last glacial cycle was the first to provide continuous time resolution, which allowed assessment of rates of sea level change. It revealed that sea level variations during the last glacial cycle were much more rapid and of greater magnitude than previously thought and indicated, controversially at the time, that Antarctic ice sheet fluctuations were likely involved. Rohling also established the first robust estimates of the rates at which the sea level rose to several meters above the present level during the last interglacial maximum, when global temperature was similar to today. On average, this rate was almost twice as fast as the most pessimistic predictions for the next century in the Intergovernmental Panel on Climate Change Fourth Assessment. Never happy to rest on his laurels, Rohling continuously seeks to develop deeper insights and new discoveries, particularly about rates of sea level change and their forcing mechanisms. Rohling has successively produced novel and influential sea level records from the Red Sea (back 550,000 years) and the Mediterranean Sea (back 5.3 million years) and, recently, a global sea level and deep-sea temperature reconstruction for the last 40 million years. Rohling emphasizes the limitations of his work – with statistical uncertainty quantification – which leads to testing of results and to further new insights. Rohling's other important contributions are many. They include quantifying ancient climate sensitivity to carbon dioxide forcing and understanding the carbon cycle and Holocene and millennial climate variability. His framework for understanding organic matter preservation in Eastern Mediterranean sediments has deepened understanding of long-term African monsoon dynamics, including their potential influence on hominin evolution and migrations out of Africa. Dr. Eelco Rohling's pioneering research has had widespread cross-disciplinary scientific impact and has influenced government policy in several countries. The oceans are a natural source of inspiration for such a deep and broad thinker as Dr. Eelco Rohling, who is a much deserving Maurice Ewing Medalist.

- Andrew P. Roberts Australian National University Canberra, Australia



#### **Field Photos**



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