Introduction • This second Biennial Scientific Report offers a glimpse of the many and wide-ranging scientific and policy supporting activities of KNMI’s Research Department over the past two years.

Three articles highlight very different topics that were of particular interest during the period covered by this Report.

The El Niño of 1997/1998 attracted huge media and scientific attention. El Niño - Southern Oscillation (ENSO) is an area of research with a long tradition at KNMI. It was Berlage who between the thirties and sixties made important contributions to our understanding of the Southern Oscillation. The latest results of our interest in the subject are summarised by Gerrit Burgers and Geert Jan van Oldenborgh.

With the increase of air traffic, concern is expressed about the environmental and climate effects of aircraft emissions. Michiel van Weele and his colleagues summarise their contributions to this active area of research and to the Intergovernmental Panel on Climate Change (IPCC) Special Report on this issue.

Our Seismology Division played a leading role in supporting the negotiations that led to the conclusion of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and continues to be instrumental in implementing a detection and verification regime for that Treaty. Hein Haak, who was a member of the Netherlands Delegation, discusses the geophysical aspects of the Treaty.
Finally, we look forward with confidence to a particularly exciting year, when we will move to our new premises, prepare for the Fifth EU Framework Programme and face a Review of our research by an international Review Board.

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The Research Department, as part of KNMI, is financed by the Ministry of Transport, Public Works and Water Management. An important aspect of our task is to give scientific advice and support to the development and implementation of the policy of the Netherlands Government. We supported the work of the Delegations that negotiated the CTBT and the Kyoto Protocol and we advise our Ministers in formulating our Government’s climate policy. To carry out these tasks, the Department is first and foremost a research department. As such we develop and maintain close links with sister institutions at home and abroad. At home we are part of the Netherlands Centre for Climate Research (CKO), a joint effort with the Institute for Marine and Atmospheric Research (IMAU) of the University of Utrecht and with the National Institute of Public Health and the Environment (RIVM). We offer opportunities to undergraduate and graduate students to carry out their research and to write their theses, in close co-operation with our universities. Abroad we co-operate with many institutions, in particular the Max-Planck-Institutes in Hamburg and Mainz, Germany, in the framework of the International School for Co-operation on Oceanic, Atmospheric and Climate Change studies (COACH). We seek additional financial support for our work from such organisations as the Netherlands Organisation for Scientific Research NWO, the EU Framework Programmes and from specialised government sponsored research programmes. Such support is essential to guarantee an influx of young people with innovative ideas and to guard and improve the quality of our work by competitively submitting our proposals to critical reviews. This Report pays particular attention to these externally funded projects with special thanks to the funding organisations.