

## Solar Physics in The Netherlands — 1999

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Solar physics research in the Netherlands is carried out at Utrecht, Nieuwegein and Noordwijk.

At the *Sterrekundig Instituut Utrecht*, the untimely death of Kees Zwaan came as a great shock. The *in memoriam* elsewhere in this Annual Report concentrates on his activities in JOSO context, but he filled an obviously important place in Utrecht solar physics, also after his 1993 retirement. He is sorely missed.

Rob Rutten continued research in chromospheric oscillations with graduate student Thijs Krijger using TRACE near-UV image sequences. Graduate student Mandy Hagenaar completed and successfully defended her thesis on network patterning and dynamics, with Karel Schrijver (at Lockheed-Martin) as de facto supervisor. She then left to continue solar research as postdoc in the Lockheed-Martin group in Palo Alto, where she had spent half of her time as graduate student already.

Bert van den Oord regrettably left solar physics, taking up a job in atmospheric physics at the Dutch meteorological service.

Jan Kuijpers supervised research in coronal mass ejections by undergraduate student Maarten van Aalst, mostly performed at Goddard with Piet Martens, and became Chairman of the Solar Physics Section of the EPS and EAS.

Rob Hammerschlag's Dutch Open Telescope (DOT) project was restarted late in 1998 when funding for a three-year "science verification" period was allocated after long negotiations. Hammerschlag and Felix Bettonvil concentrated on improving the telescope pointing and control, and designing and testing secondary optics for simultaneous imaging at different wavelengths. A breakthrough came with the trial of speckle restoration by newly hired ESMN postdoc Peter Sütterlin at the DOT, demonstrating that the good La Palma seeing, the excellent optical quality of the telescope and the speckle-masking method combine into superb image quality. The September 20 sunspot sequence taken by Sütterlin and Bettonvil during the ESMN campaign gives a vivid demonstration (accessible via the DOT website <http://www.astro.uu.nl/~rutten/dot>).

At the *Utrecht Space Research Institute*, a non-university institute, partial interests in solar physics were retained by Peter Hoyng (dynamo theory), Rolf Mewe and Jelle Kaastra (plasma diagnostics).

At the *FOM Institute for Plasmaphysics* at Nieuwegein (also non-university) Hans Goedbloed leads a plasma physics group that in 1999 included postdocs Rony Keppens and Sander Belien and graduate student Bart van der Holst. Their expertise concentrates on linear and nonlinear magnetohydrodynamic (MHD) studies of laboratory and astrophysical plasmas, in particular the role of flows in magnetically controlled plasma phenomena. Solar physics applications include analytic and numerical modeling of stationary and variable solar wind conditions, heating of fully stratified coronal loops driven at their footpoints, studies of magnetic effects in multi-dimensional

Kelvin-Helmholtz unstable jet flows. These themes benefit from a cross-fertilization from MHD spectroscopy of tokamak plasmas. The computational effort is apart of an interdisciplinary collaboration on massively parallel computational magneto-fluid-dynamics. Info and examples are at <http://www.phys.uu.nl/~mpr/> and <http://www.phys.uu.nl/~toth/>.

At *ESTEC* (Noordwijk) there is an international (and rather transient) ESA solar physics group that is involved, among other projects, in SOHO and Ulysses. At the end of 1998 the group at ESTEC consisted of Thierry Appourchaux (helioseismology, SOHO), William Chaplin (research fellow, helioseismology, SOHO and BISON data, until 24 August), Vicente Domingo (irradiance variations, until 30 April), Bernard Foing (solar and stellar spectroscopy), Martin Huber (Head ESA Space Science Department), David Lario (research fellow, energetic particles, Ulysses data, until 1 December), Milan Maksimovic (research fellow; Solar Wind, Ulysses data, until 30 September), Richard Marsden (Ulysses), Salvatore Orlando (research fellow; coronal loops, SOHO/Yohkoh data, until 30 September), Trevor Sanderson (Ulysses), and Peter Wenzel (Head of the Solar System Division; Ulysses).

Finally, the *SOHO Project Scientist Team* consisting of Sander Beliën (ESA external research fellow; coronal heating, MHD modelling, until 28 February), Paal Brekke (SOHO Deputy Project Scientist; UV/EUV spectroscopy; transition region dynamics) Bernhard Fleck (SOHO Project Scientist; chromospheric dynamics), Jack Ireland (ESA external research fellow; coronal heating, MHD modelling), and Luis Sanchez (SOHO Science Data Coordinator; helioseismology) resided at Goddard Space Flight Center in Greenbelt, Maryland.