SCIAMACHY L2 Ground Processor V. 7 Phase F Re-processing

G. Lichtenberg$^1$, M. Meringer$^1$, S. Gretschen$^1$, N. Theys$^2$, C. Lerot$^2$ S. Noël$^3$, K. Eichmann$^4$, A. Dehn$^4$

$^1$Remote Sensing Technology Institute (IMF), German Aerospace Center (DLR), Oberpfaffenhofen, Wessling, Germany; $^2$Belgian Institute for Space Aeronomy (IASB-BIRA), Brussels, Belgium; $^3$Institute of Environmental Physics / Remote Sensing (IUP/IFE), University of Bremen, Germany; $^4$ESA-ESRIN, Frascati, Italy

Introduction

SCIAMACHY (SChanning Imaging Absorption spectroMeter for Atmospheric CHartographY) was a scanning nadir and limb spectrometer. After the platform failure in April 2012, SCIAMACHY is now in phase F. It had unique capabilities:

- It could measure in Nadir, Limb and Occultation modes.
- It observed Sun, Moon and Earth regularly for 10 years.
- It covered the wavelength range from 212 nm to 2386 nm in 8 channels.
- It could detect a large variety of atmospheric gases (e.g. O$_3$, H$_2$CO, CHOCHO, SO$_2$, BrO, OClO, NO, H$_2$O, CO, CH$_4$, among others) and did provide information about aerosols and clouds.
- It measured column densities and vertical profiles of trace gas species in the mesosphere, in the stratosphere and in the troposphere.

The latest Level 2 version 7 was re-processed and is now under validation (see poster A. Kappens).

Products and Processing Chains

Limb Clouds

Global map ($2^\circ \times 2^\circ$) of the annual mean cloud top height (in km) for 2006. The superimposed red rectangles show the approximate size of three consecutive SCIAMACHY limb scans. The Limb Cloud retrieval SCODA (IUP) that also allows to distinguish and detect water clouds, ice clouds, NLC and PSC was refined for version 7.

New: Tropospheric BrO

Bromine events as seen by SCIAMACHY. Left: BIRA reference. Right: DLR operational processing. Differences can be explained by different cloud information used.

References & Further Information


Contact Information

If you like to have further information, you can reach me at guenter.lichtenberg@dlr.de