Introduction
GODIVA (GOME Data Interpretation, Validation and Application) is a European Community pilot project funded through Theme 3 (Space Technologies applied to Environmental Monitoring and Research). The main aims include the improvement of the accuracy of existing GOME data products, i.e. radiance, ozone, NO2, vertical columns, and to develop new advanced GOME data products such as ozone profiles, OCIO, BrO, HCHO and SO2 columns. GODIVA is a project for defining end user needs and developing validated near real-time (NRT) data products and other data products needed for short-term logistical planning and post-campaign data interpretation. The GOME NRT level 1 data products (radiance and solar irradiance) were generated by the GOME data processor (GDP) located at the Kiruna ground station, which is one of five ESA (European Space Agency) stations receiving global data from the ERS-2 (European Remote Sensing satellite). A maximum of ten out of the 14 daily GOME orbits are transmitted to Kiruna. The GDP is operated by the Deutsche Fernerkundungsdatenzentrum DFD of DLR (Deutsche Luft und Raumfahrt) Oberpfaffenhofen. After each completed orbit, the data was sent via ftp from Kiruna to the NADIR data base.

Results
The data received at NADIR could then be analysed either at NILU or sent further to other GODIVA project partners in support of the THESEO (Third European Stratospheric Experiment Ozone). In the future, a similar processing chain could be envisaged for producing input for atmospheric chemistry transport and numerical weather prediction models. Examples of several of the above mentioned products from periods of interest during the winter of February and March of 1999 are shown. In Figure 1, slant column OCIO from 6th Feb. is shown. A very strong correlation between high OCIO and low temperatures (sub-200 Kelvin) with coinciding high potential vorticity at the 475K and 550K isentropic levels was observed for several periods during February. Such information can yield information on the vertical distribution of OCIO as well as possible chlorine activation within the polar vortex.

In Figure 2, vertical column BrO values indicated elevated tropospheric BrO in northern Canada and Siberia. This naturally occurring phenomenon can lead to substantial ozone depletion in the lower troposphere during the spring in the Arctic and Antarctic. In Figures 4 and 5, ozone profiles over northern Europe are derived using the Bremen FURM retrieval algorithm. This inversion scheme uses the radiative transfer code GOMETRAN++ as the forward model to derive ozone profiles from the UV spectral region. 24-hour forecasts for the temperature and pressure profiles are provided by ECMWF for use in the NRT evaluations.

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GODIVA websites:
Coordination: www.sron.nl/divisions/cos/godiva
OCIO: www.nilu.no/projects/nadir/index.html
BrO: www.iup.physik.uni-bremen.de/gome/bro/html/gome_tab_99_bro_1.html
Ozone Profiles: www.iup.physik.uni-bremen.de/ifepage/gprof_theseo.html
Global Ozone Maps: www.knmi.nl/onderzk/atmosam/

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