Title	Description of Version 1.0 of the atmospheric water vapour profile collected using a UV Raman LiDAR located at CFARR, during the NCAVEO 2006 Experiment.
Document created by	Emma Rockall
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Revision history	First release.
Purpose	To describe the pre-processing of the atmospheric water vapour profile data collected.
Data files in the set	uvlidar_nfc06_cfarr_watervapour_20060616_10.nc uvlidar_nfc06_cfarr_watervapour_20s_20060616_10.nc uvlidar_nfc06_cfarr_watervapour_20060616_10.jpg uvlidar_nfc06_cfarr_watervapour_20s_20060616_10.jpg
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Terms of use **(see NEODC website for the full version)**	The data may be used for all non-commercial research/project work undertaken by the NCAVEO network, in particular to learn about cal-val issues. If you wish to use the data set please contact the PI listed above. If you intend to publish a paper or give a presentation based on, or making significant use of these data, please consider including the PI(s) as co-author(s) at an early stage in the process. In all cases where the data are used in a presentation or publication, an acknowledgement must be given: for example, "*Data from the NCAVEO 2006 Field Campaign are provided courtesy of NCAVEO via the NERC Earth Observation Data Centre (NEODC)*."

The ground-based Raman lidar system at Chilbolton Facility for Atmospheric and Radio Research (http://www.chilbolton.rl.ac.uk/lidar.htm) transmits a high power Nd:YAG pulse laser beam vertically into the atmosphere at 355 nm wavelength. The LiDAR measures both elastic backscattering and water vapour profiles in the troposphere. Inelastic scattering of the laser radiation by molecules in the atmosphere, termed Raman scattering, is used to determine the atmospheric water vapour and temperature profiles.

The atmospheric water vapour profile was recorded on 16th June 2006, one day before the 'golden day', using the UV Raman LiDAR located at the Chilbolton (British National Grid Reference SU 394386). The following parameters were used during data collection:

Integration time = 20 seconds
height resolution = 7.5 metres

Pre-processing of the data altered the temporal and height resolution of the data and converted the file format:

16th June 2006- Raw data recorded
26th June 2006- Raw data cleaned, averaged to 5 minute, 22.5 metre resolution and saved as c* . b* files. Calibration applied and netCDF file produced from cleaned data.

This dataset contains data for the raw (20s/7.5m) and processed (5min/22.5m) data in separate files. These NetCDF files are accessible using HDFView, a visual software tool that can be freely downloaded from http://www.hdfgroup.org/hdf-java-html/hdfview/ . The two jpeg images provide quick examples of the data available.

References

British Atmospheric Data Centre (2005) Chilbolton 355 nm UV Raman lidar data, http://badc.nerc.ac.uk/data/chilbolton/lidar_uv.html (Accessed 23rd July 2008)

Chilbolton Observatory (2008) UV Raman Lidar, http://www.chilbolton.rl.ac.uk/lidar.htm (Accessed 23rd July 2008)

Vaughan, G., Wareing, D.P, Thomas, L. and Mitev, V (1988) Humidity measurements in the free troposphere using Raman backscatter, *Quarterly Journal of the Royal Meteorological Society*, Vol. 114, pp. 1471-1484