



SCIAMACHY lunar and solar occultation retrieval: Ozone, NO₂, and NO₃ results from 2002-2007

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Vertical profiles of ozone, NO₂, and NO₃ have been derived from lunar and solar occultation transmission spectra measured by SCIAMACHY (Scanning Imaging Absorption Spectrometer for Atmospheric Chartography) on board the ENVISAT (Environmental Satellite) using the global spectra fitting and optimal estimation methods. NO₂ and ozone are retrieved from the continuous visible spectral region of 430–460 nm and 520–580 nm respectively. NO₃ which is retrieved from lunar occultation measurements only, is derived from the continuous spectral region containing the most intense NO₃ absorption band at 623 and 662 nm. The quality of the retrieved ozone and NO₂ profiles have been assessed with other satellite instruments. The NO₃ results are compared with photochemical models. The retrieval accuracy of ozone is within 10 % between 20 to 45 km. The accuracy of NO₂ is less than 20 % between 20 to 40 km, NO₃ accuracy is less than 30 % between 18 to 50 km.