

SATELLITE OBSERVATIONS OF THUNDERSTORM RELATED CHEMICAL CHANGES IN THE MIDDLE ATMOSPHERE

ANTTI KERO 1, E. Arnone 2, C.-F. Enell 3, F. Sao-Sabbas 4, M. Carlotti 5, B. M. Dinelli 6, C. J. Rodger 7, E. Papandrea 8, M. Ridolfi 9, N. F. Arnold 10, E. Turunen 11

1. Sodankylä Geophysical Observatory, University of Oulu, Sodankylä, Finland, antti.kero@sgo.fi
2. Dept. of Physical and Inorganic Chemistry, University of Bologna, Viale Risorgimento 4, 40136 Bologna, Italy, arnone@fci.unibo.it
3. Sodankylä Geophysical Observatory, University of Oulu, Sodankylä, Finland; carl-fredrik.enell@sgo.fi
4. Instituto Nacional de Pesquisas Espaciais-INPE, DAE/INPE, saosabbas@dae.inpe.br
5. Dept. of Physical and Inorganic Chemistry, University of Bologna, Viale Risorgimento 4, 40136 Bologna, Italy, carlotti@fci.unibo.it
6. Istituto di Scienza dell'Atmosfera e del Clima – CNR, Bologna, Italy, bm.dinelli@isac.cnr.it
7. Department of Physics, University of Otago, Dunedin, New Zealand, crodger@physics.otago.ac.nz
8. Dept. of Physical and Inorganic Chemistry, University of Bologna, Viale Risorgimento 4, 40136 Bologna, Italy, enzo@safire.fci.unibo.it
9. Dept. of Physical and Inorganic Chemistry, University of Bologna, Viale Risorgimento 4, 40136 Bologna, Italy, marco.ridolfi@unibo.it
10. Department of Physics and Astronomy, University of Leicester, Leicester, United Kingdom
11. EISCAT Scientific Association, Kiruna, Sweden, esa.turunen@eiscat.se

The impact of thunderstorm activity on the nighttime middle atmospheric NO₂ and ozone is observed by the MIPAS infrared spectrometer onboard the ENVISAT satellite. The WWLLN lightning detection network is used to localise the intense thunderstorms. The original five-month dataset that led to the identification of a possible sprite-induced NO₂ perturbation (Arnone et al., GRL, 35, L05807, 2008) is expanded to cover all existing MIPAS measurements during 2002-2008. Specific case studies are further discussed in conjunction with available sprite observations.

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Antti Kero, Sodankylä Geophysical Observatory, University of Oulu, Tähteläntie 62, FI-99600, Sodankylä, Finland, antti.kero@sgo.fi