Auroral spectra from a High Throughput Imaging Spectrograph (HiTIES) operated in Svalbard by the University of Southampton. The three panels show the N$_2$+ 1neg (1,3) band (top), the H-beta line (center), and the N$_2$+ 1neg (0,2) band (bottom). The black line shows the measured spectrum in the magnetic zenith. Overlaid in blue are synthetic spectra of the N$_2$+ 1neg bands. Also indicated in the top panel in green are O$^+$ (4P-$4D^0$) lines which are clearly resolved with this instrument. This measurement was combined with an auroral transport calculation to estimate the excitation cross section for the O$^+$ line. (Ivchenko, N., M. H. Rees, B. S. Lanchester, D. Lummerzheim, M. Galand, and K. Throp, Observation of O$^+$ (4P-$4D^0$) lines in electron aurora over Svalbard, Ann. Geophys., 22, 2805, 2003).