Figure S1. Locations of air with more than 150 ppbv ozone sampled during the ATom deployments. Each point represents 500 seconds of cloud-free air when PALMS was sampling.
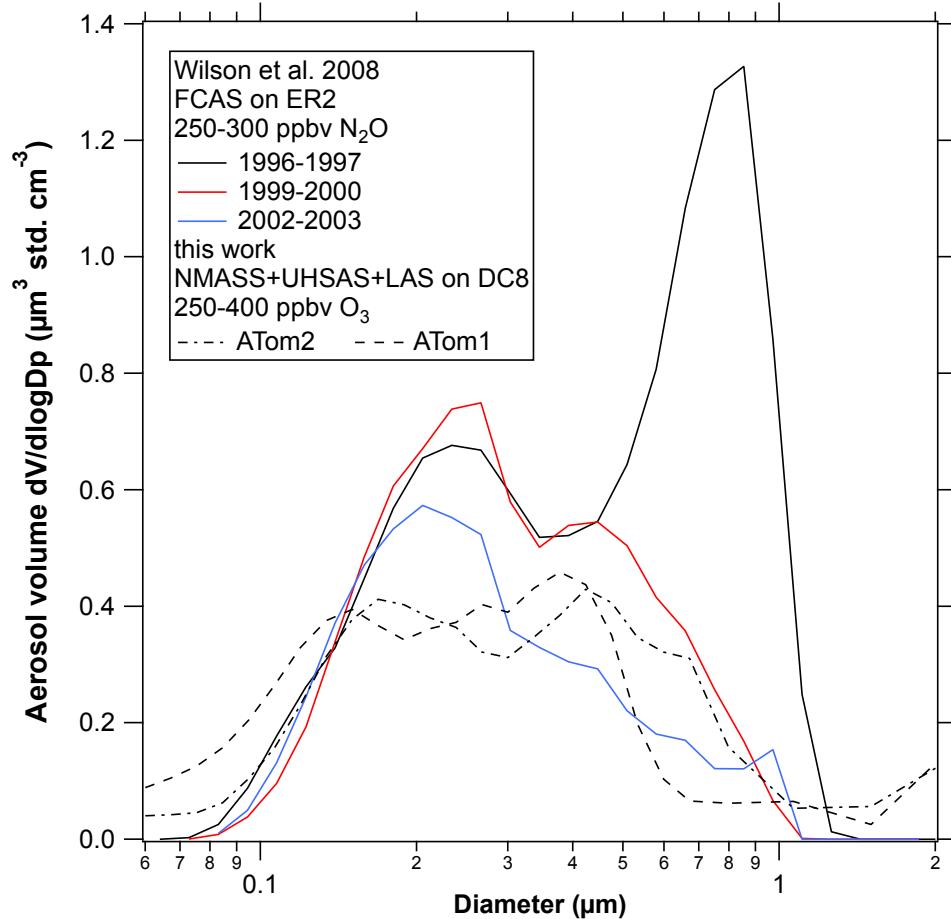
Figure S2. A comparison of this work with size distributions in Wilson et al. (2008). These are absolute concentrations instead of the normalized concentrations in the bottom panel of Figure 2 in Wilson et al. (2008). All data are for the Northern Hemisphere. 250 to 400 ppbv of ozone corresponds to roughly 275 to 300 ppbv of N_2O in the late 1990s. The 1996 Wilson et al. data show the aerosol still influenced by the Mt. Pinatubo eruption after the largest particles had sedimented out.
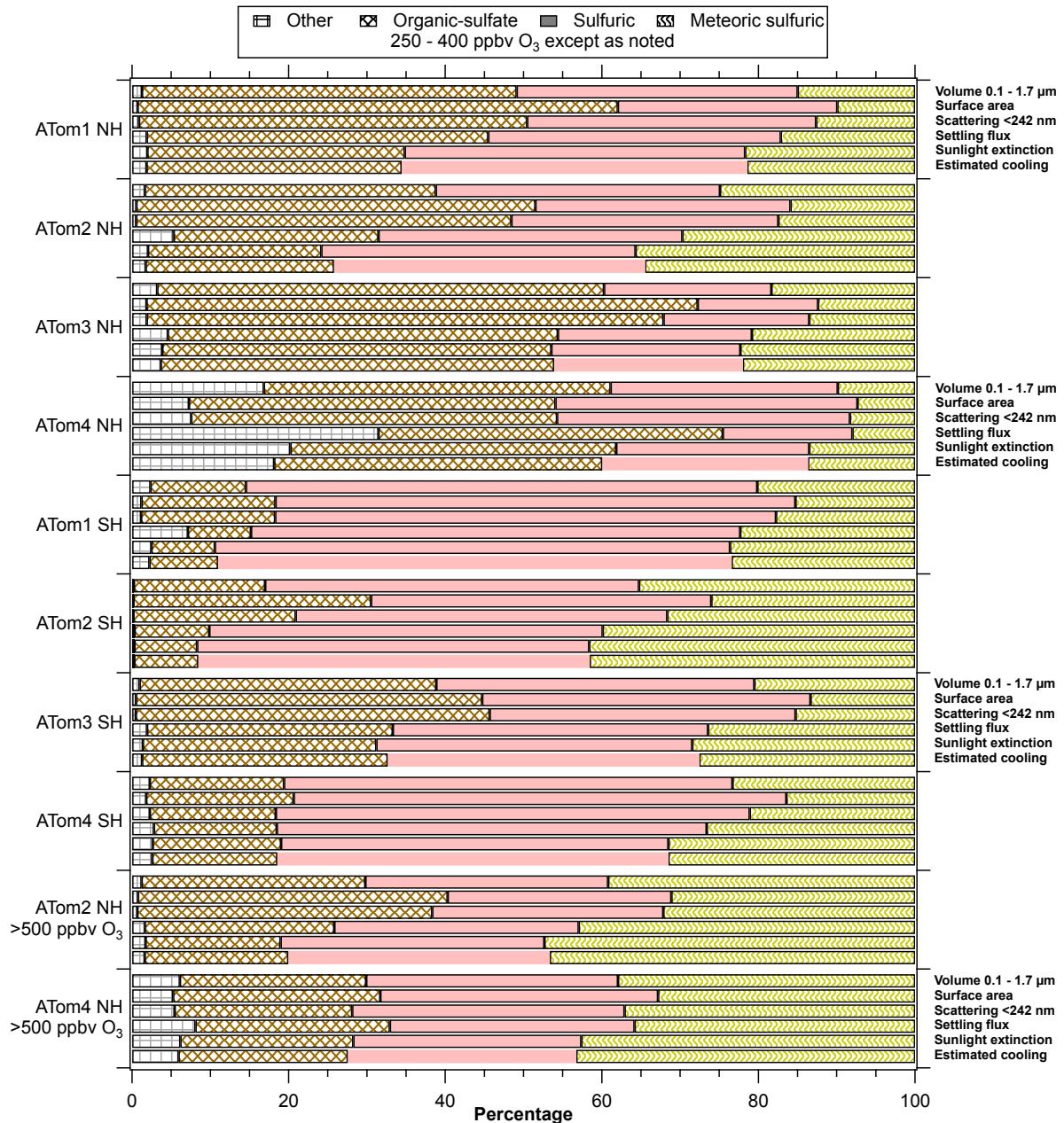
Figure S3. Percentages of various effects of dry aerosols in the lowermost stratosphere by type of particle. All calculations are for 0.1 to 1.7 μm diameter. Fractional abundances were extended to 0.1 μm when the data ended slightly above that (see Figure 1). Scattering <242 nm means scattering in the 210-242 nm range important for O_2 photolysis. Settling flux is for 20 km altitude pressure. The settling percentages are not very sensitive to pressure. Estimated cooling is backscatter of sunlight to outer space minus an offset independent of size to estimate the warming due to infrared absorption. Infrared heating for sulfuric acid was used for all particle types because there are insufficient infrared spectral data for the other particle types.