Supplementary material

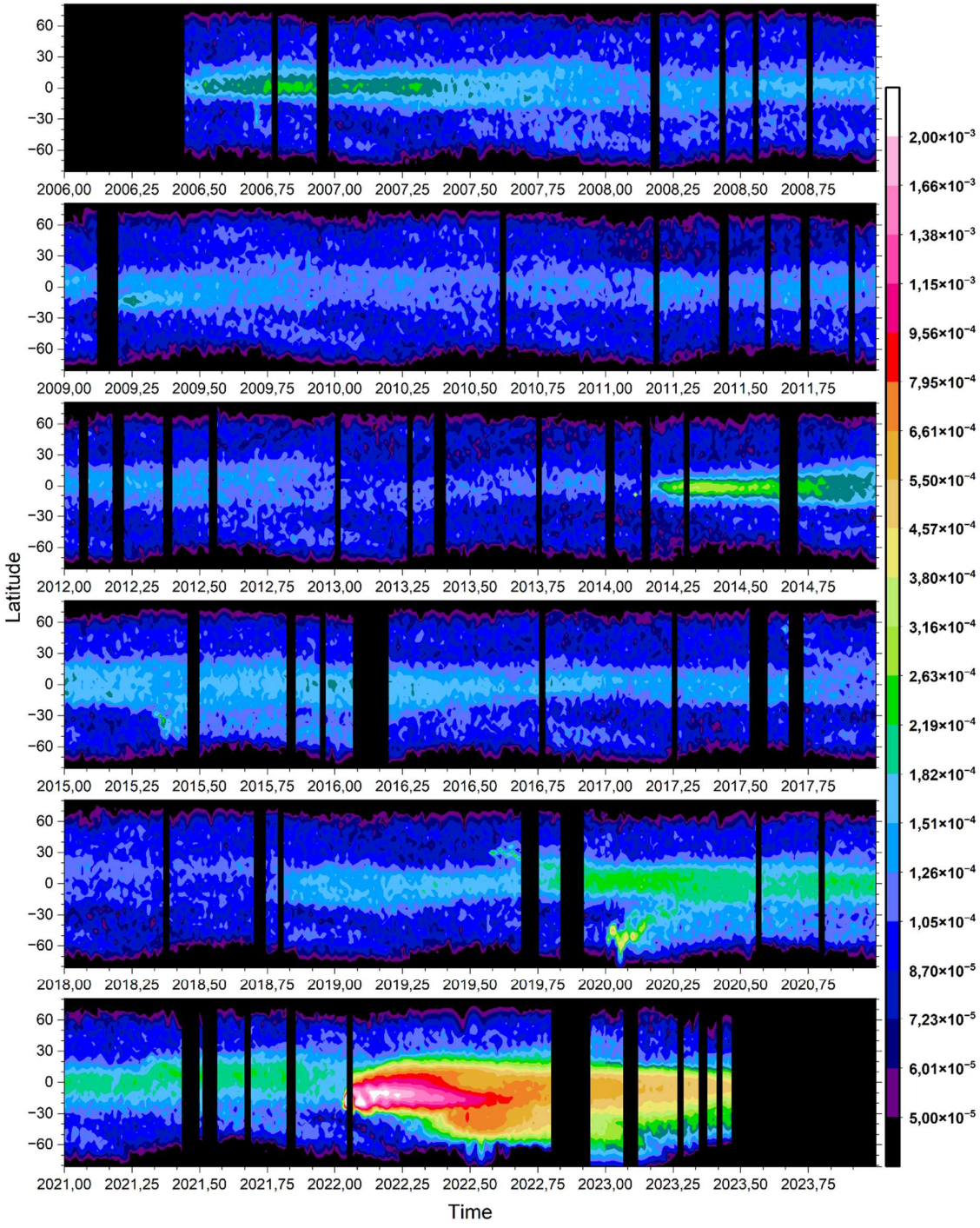

Figure S1. Aerosol scattering integrated from the 470 K isentrope to 35 km altitude (the deep Brewer-Dobson branch) averaged over 4 days and 3 degrees in latitude. Color scale: Global AOD contribution per degree of latitude, i.e. the sum over latitude is the global AOD of the layer.

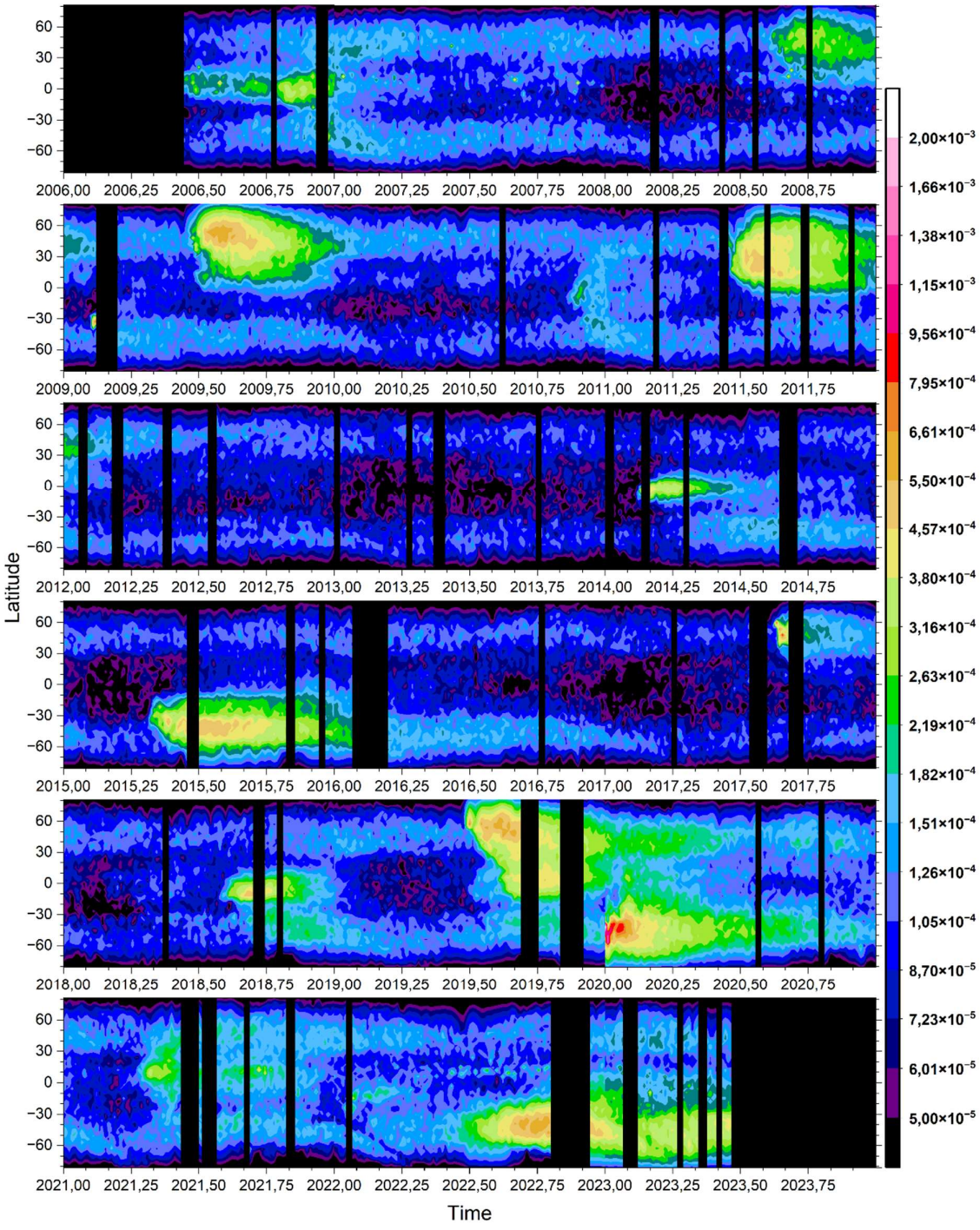

Figure S2. Aerosol scattering integrated between the 380 and 470 K isentropes (the shallow Brewer-Dobson branch) averaged over 4 days and 3 degrees in latitude. Color scale: Global AOD contribution per degree of latitude, i.e. the sum over latitude is the global AOD of the layer.

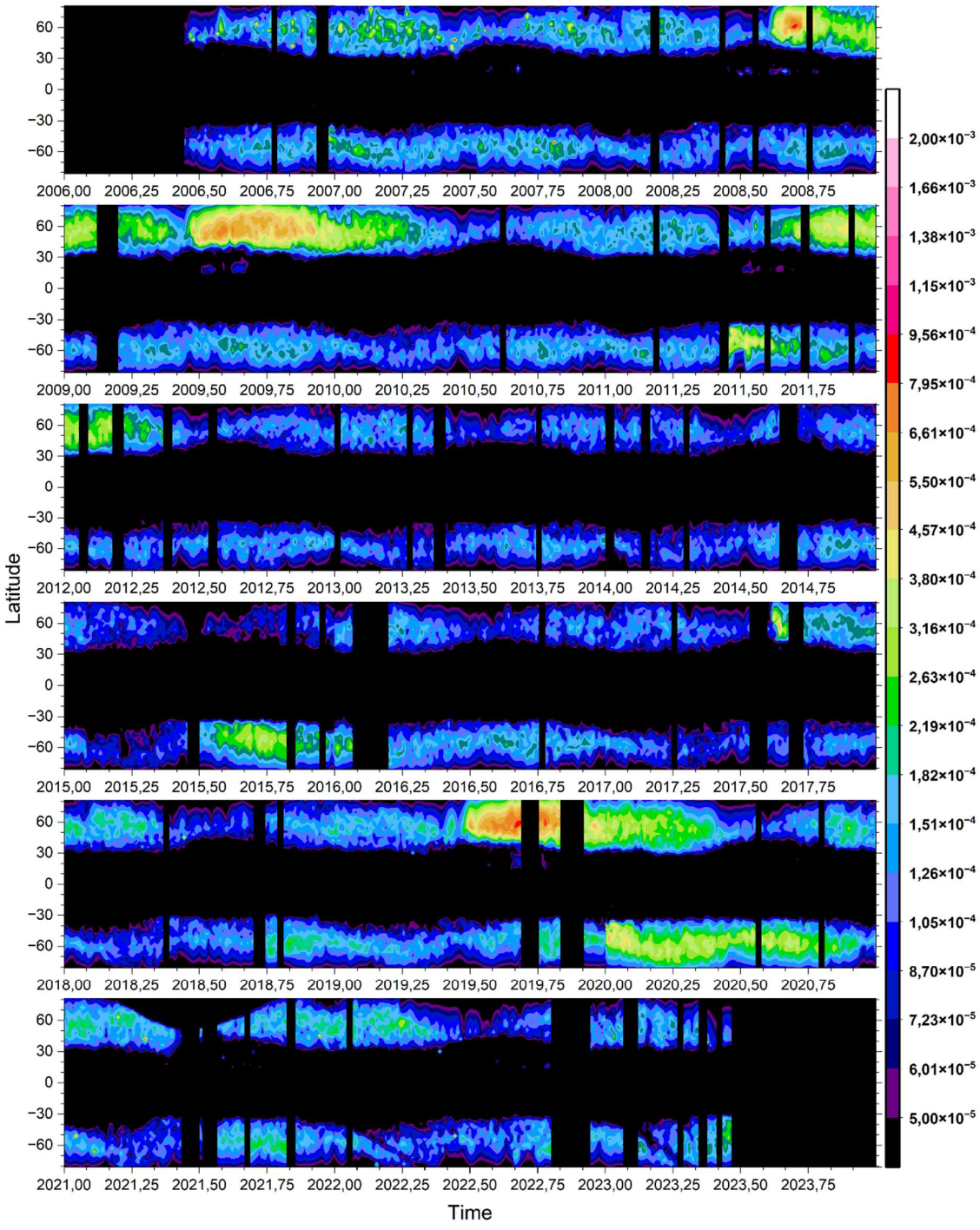

Figure S3. Aerosol scattering integrated from the tropopause to the 380 K isentrope (the lowermost stratosphere) averaged over 4 days and 3 degrees in latitude. Color scale: Global AOD contribution per degree of latitude, i.e. the sum over latitude is the total AOD of the layer.

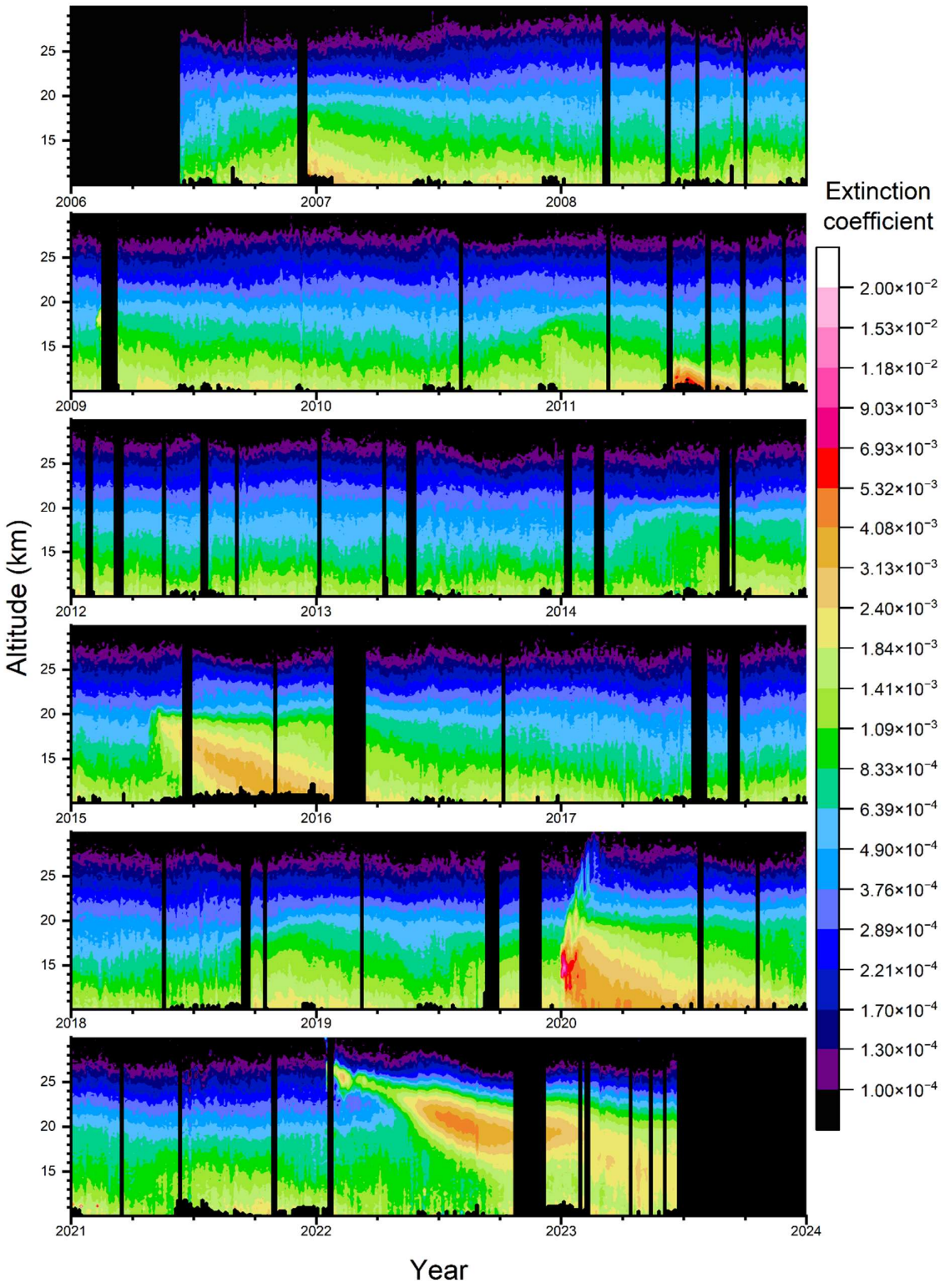

Figure S4. Aerosol extinction coefficient in the Southern hemisphere (latitudes -80 to -20°) from 10 to 35 km altitude. The data have not been latitude weighted.

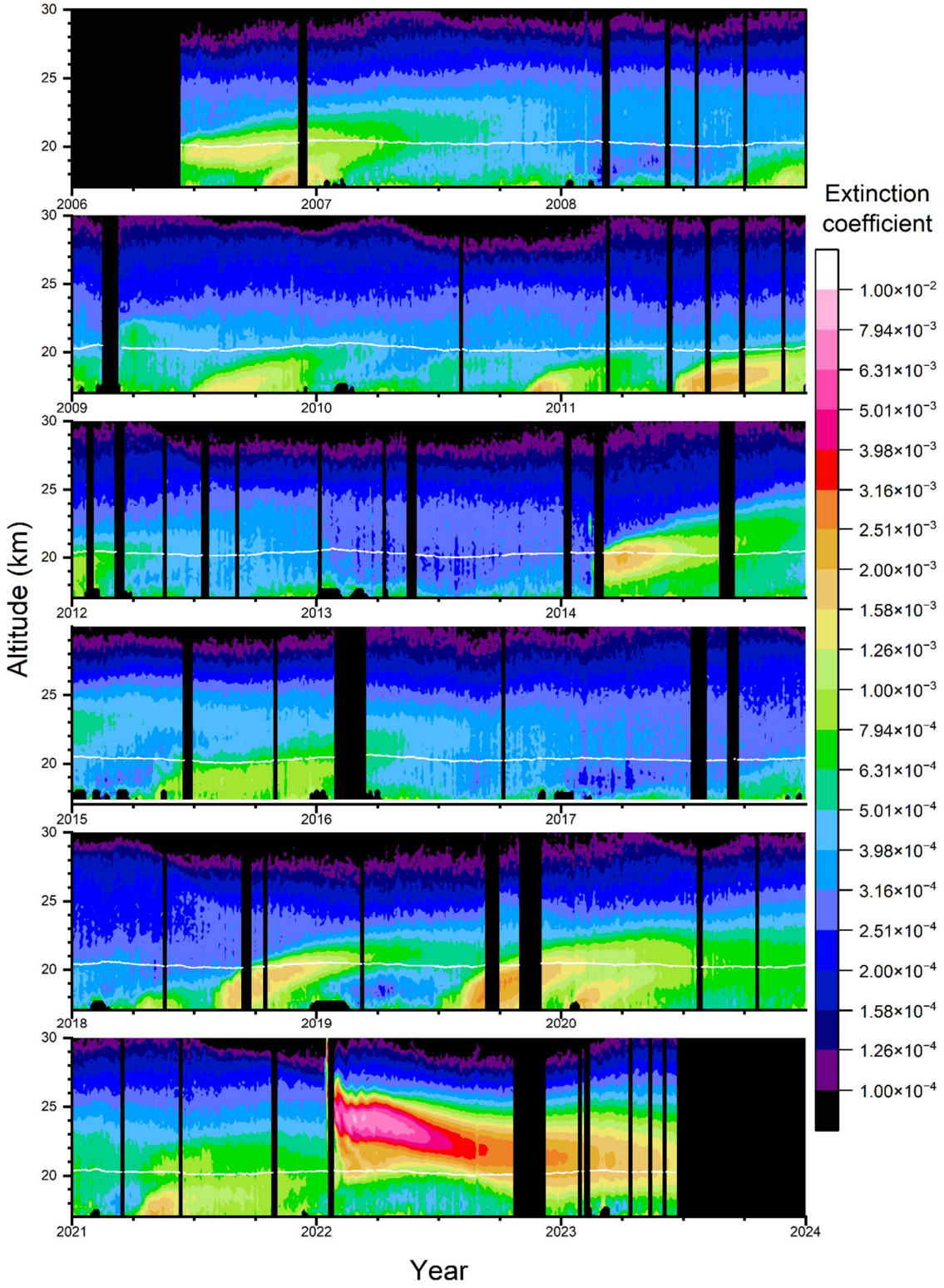

Figure S5. Aerosol extinction coefficient in the Tropics (latitudes -20 to 20°) from 17 to 35 km altitude. The data have not been latitude weighted. The white line shows the 470 K isentrope.

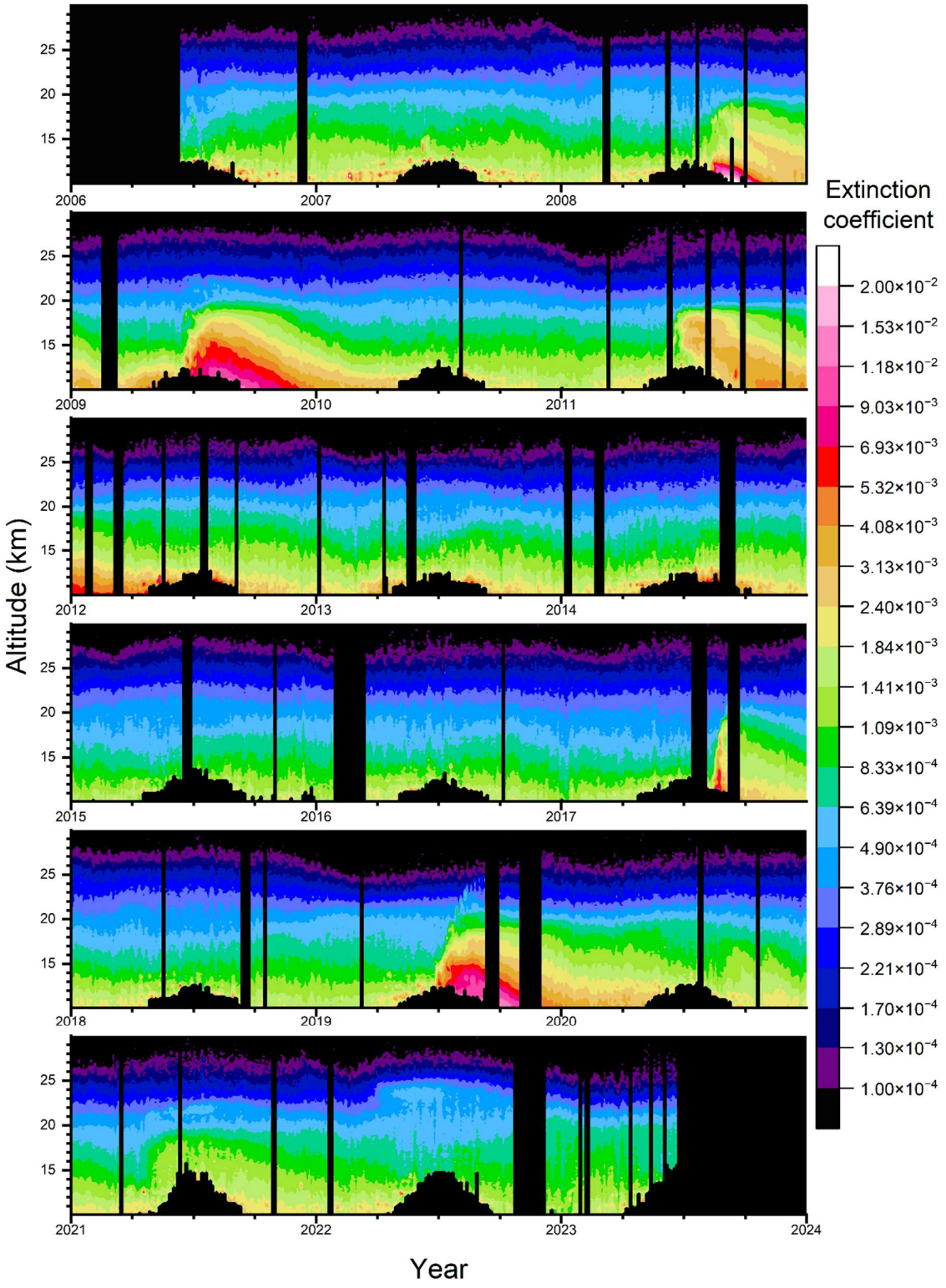

Figure S6. Aerosol extinction coefficient in the Northern hemisphere (latitudes 80 to 20°) from 10 to 35 km altitude. The data have not been latitude weighted.

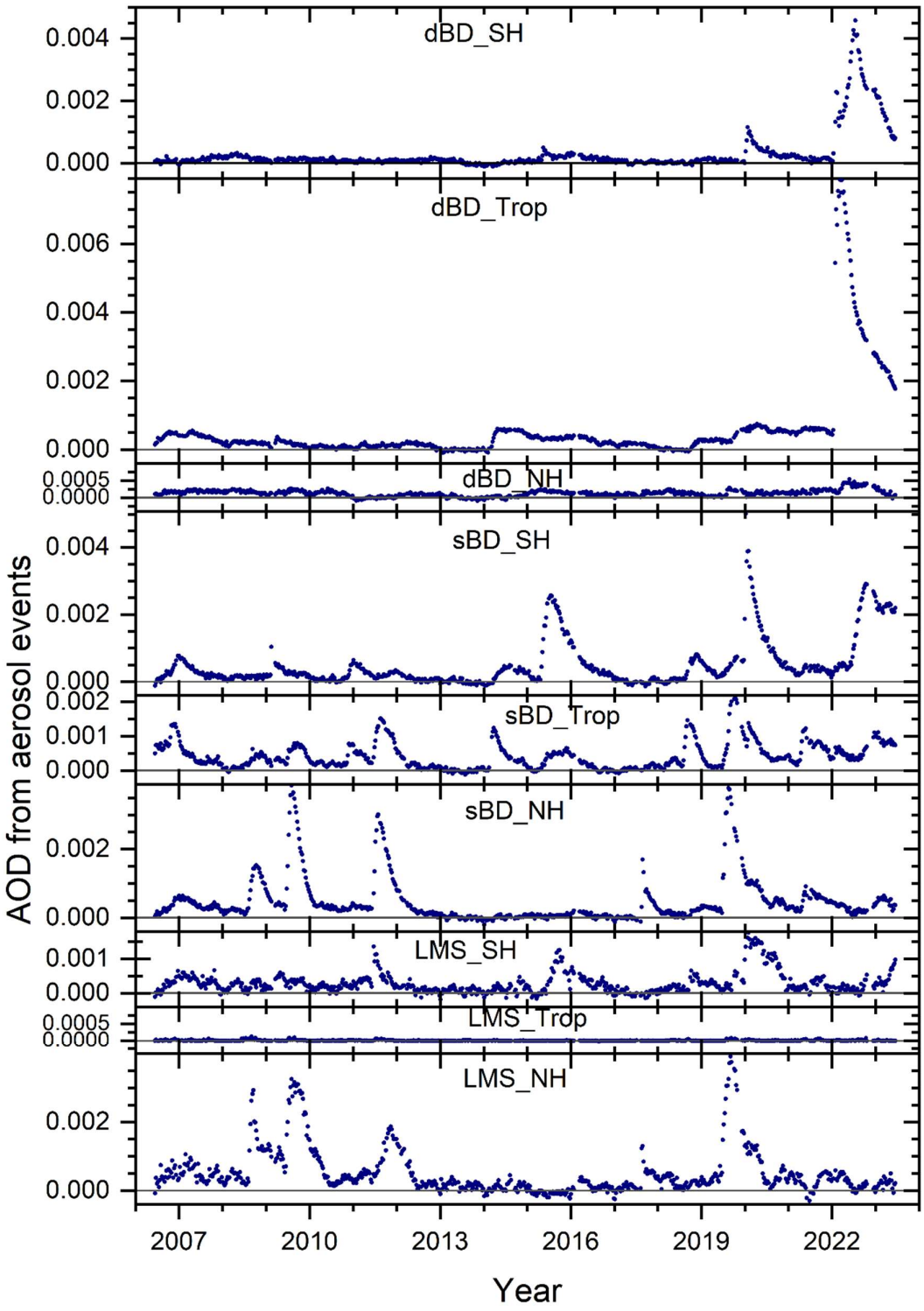

Fig. S7. Stratospheric AOD based on lidar ratio of 50 Sr after subtraction of background scattering (Figure 4) in nine latitude and altitude regions. The sum of the nine AOD curves displayed is the average AOD from the tropopause to 35 km altitude in the latitude range -80 to 80°.