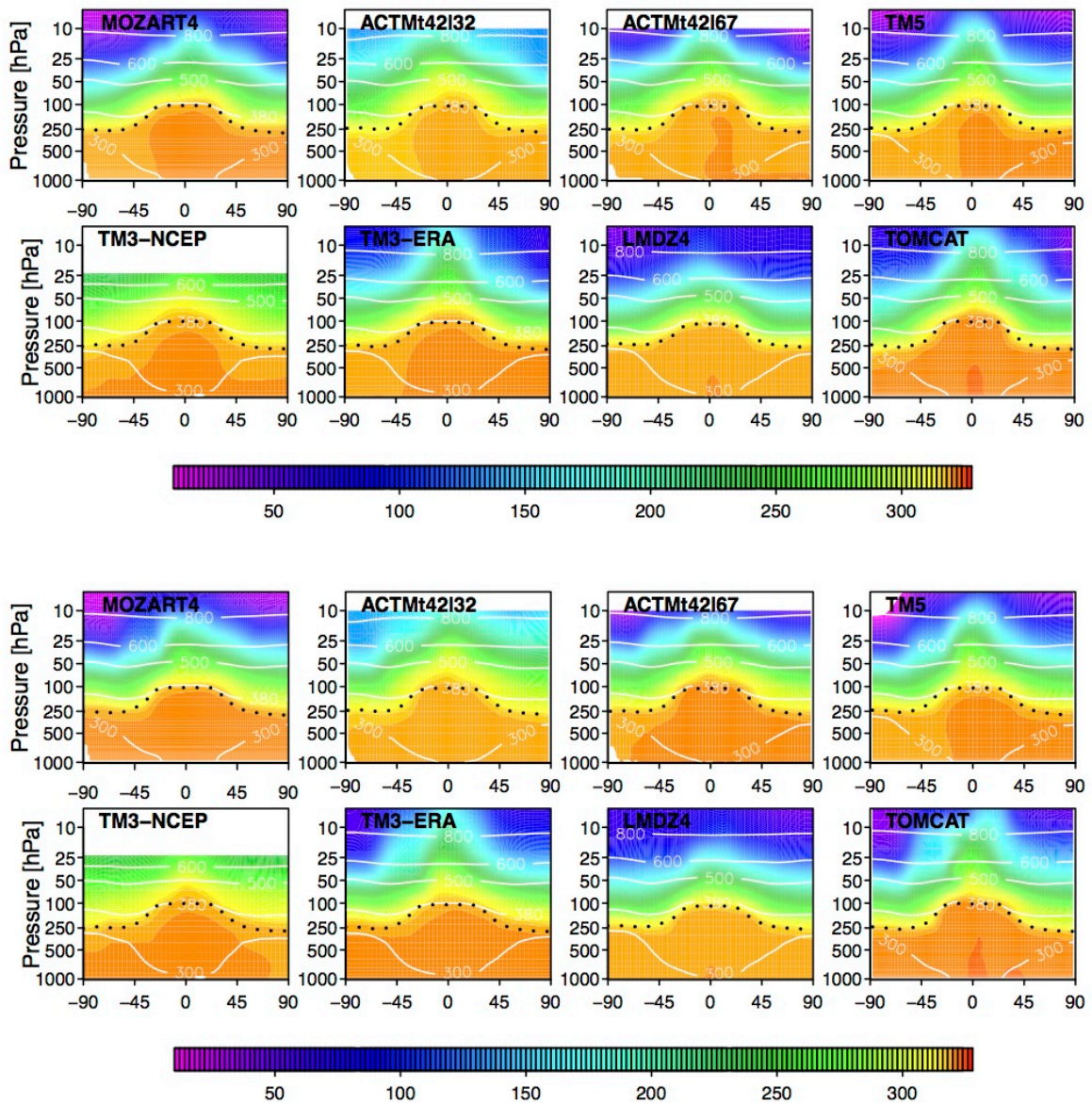


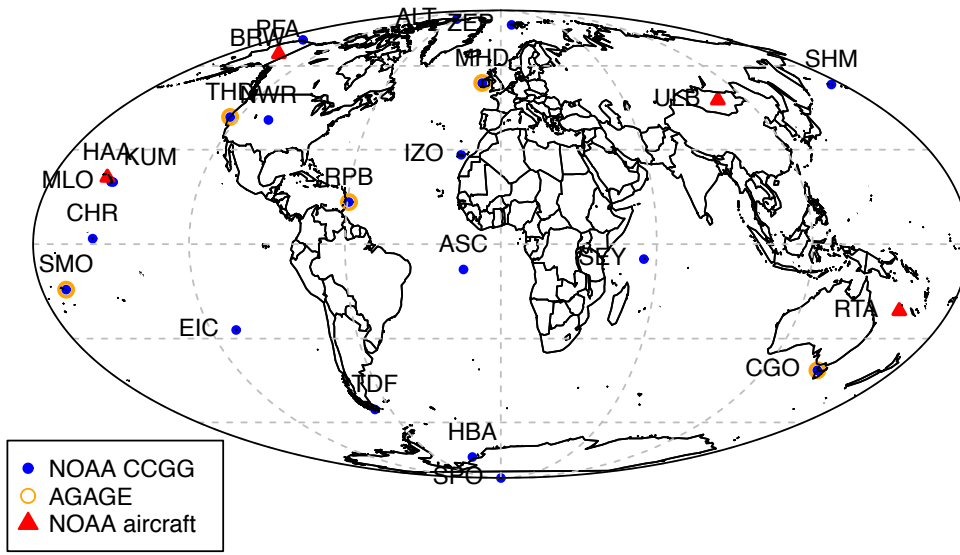
## Supplement

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Fig. S1. Simulated zonal mean vertical profiles of N<sub>2</sub>O mixing ratio (ppb) for DJF (upper panel) and JJA (lower panel) shown for each model as indicated in the top-left corner. Superimposed are contours of annual mean potential temperature (K) (white lines) and annual mean tropopause height (dotted black line).

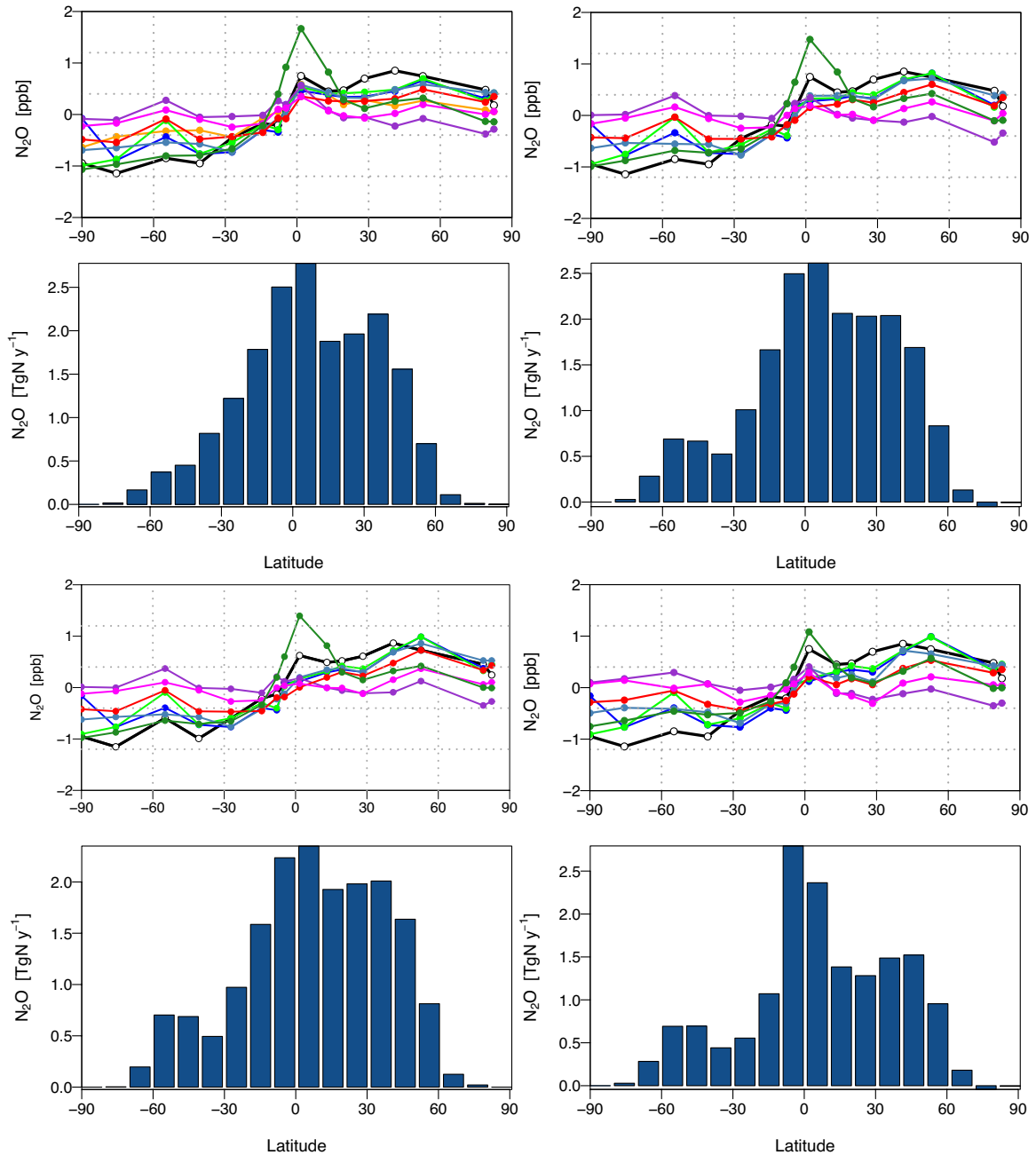


1 Fig. S2. Map showing the observations used in this inter-comparison study.



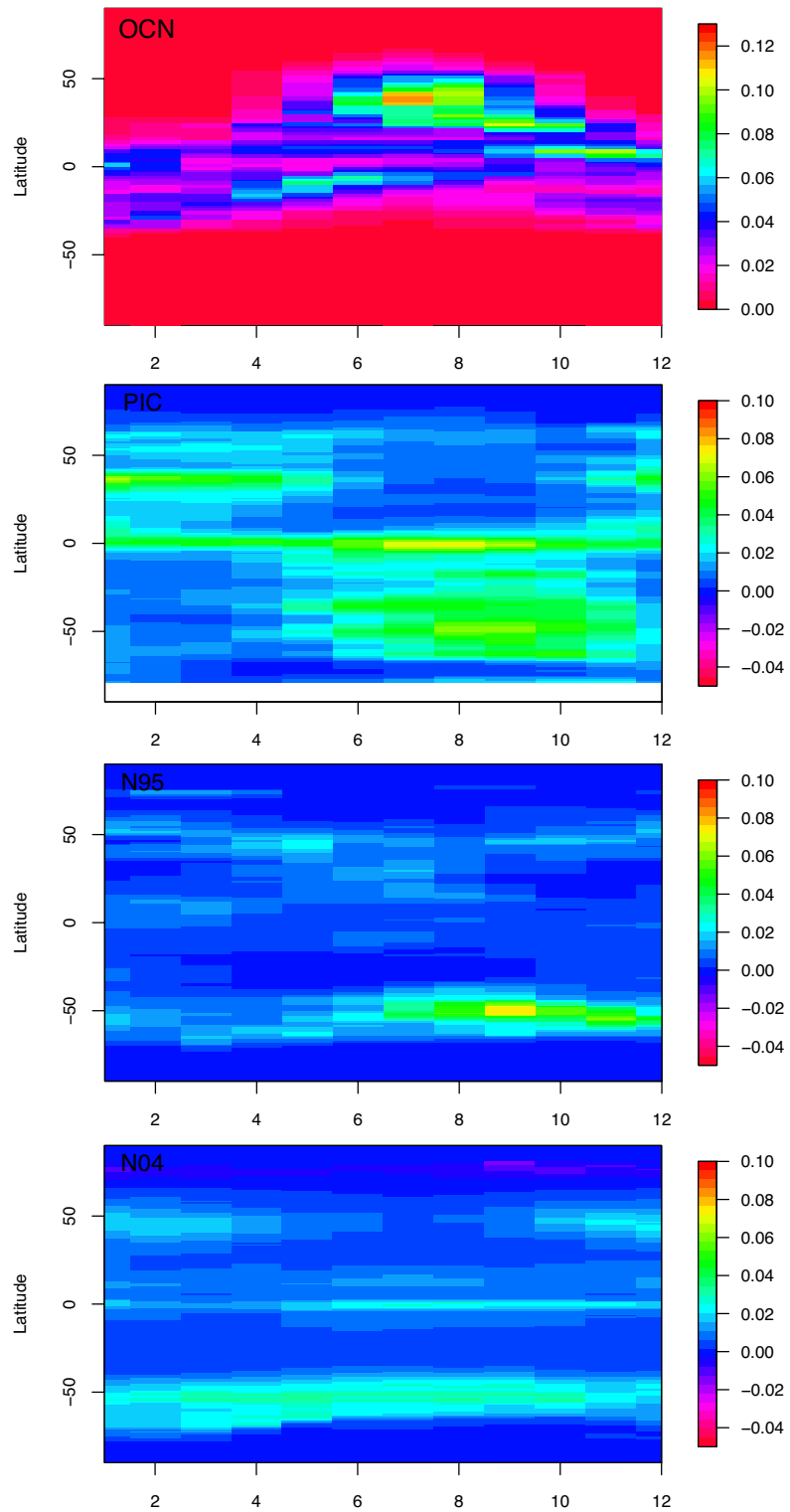
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1 Fig. S3. Comparison of the zonal annual mean meridional gradients of N<sub>2</sub>O (ppb) at the  
 2 surface with the modelled/observed global mean mixing ratio subtracted. Shown are the  
 3 gradients calculated using the flux scenarios: OCNPIC (top left), OCNN04 (top right),  
 4 OCNN95 (bottom left), and BWMN04 (bottom right) with the integrated flux in 10°  
 5 latitudinal bands (TgN y<sup>-1</sup>) from each scenario shown in the bar-plot below. Legend: Mozart4:  
 6 yellow, ACTMt42132: blue, ACTMt42167: green, TM5: grey-blue, TM3-NCEP: purple,  
 7 TM3-ERA: red, LMDZ4: magenta, TOMCAT: dark green, observed: black.  
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1 Fig. S4. Hovmöller plots of N<sub>2</sub>O fluxes from the terrestrial biosphere in OCN (BWM had no  
2 seasonal cycle) and from the ocean in PIC, N95 and N04 (from top to bottom). Fluxes are  
3 shown in gN m<sup>-2</sup> y<sup>-1</sup>.  
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