

Supplementary information to: Gravitational separation of Ar/N₂ and age of air in the lowermost stratosphere in airborne observations and a chemical transport model

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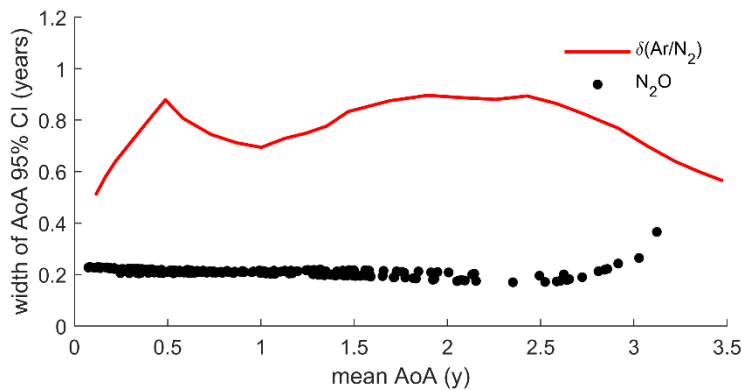


Figure S1. Width of the 95% confidence interval for AoA estimates from N₂O based on the Markov chain Monte Carlo algorithm (points, see methods) and from $\delta(\text{Ar}/\text{N}_2)$ using the AoA- $\delta(\text{Ar}/\text{N}_2)$ relationship in TOMCAT (red line).

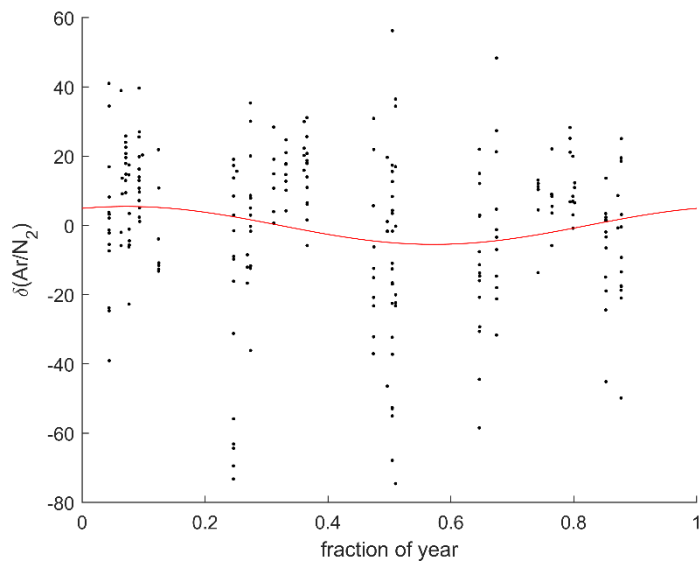


Figure S2. Seasonal cycle of $\delta(\text{Ar}/\text{N}_2)$ in the tropical upper troposphere ($20^\circ > \text{lat} > -20^\circ$ & altitude > 6 km).

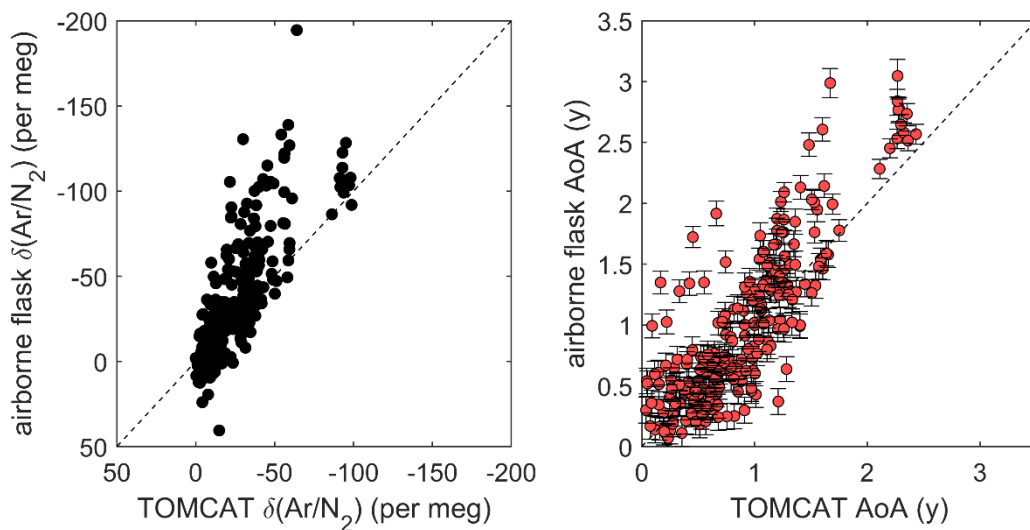


Figure S3. Comparison of AoA and $\delta(\text{Ar}/\text{N}_2)$ in TOMCAT to the airborne campaign data in the lowermost stratosphere. TOMCAT grid cells are chosen to be closest in space in time to the observations, but unresolved mixing processes sometimes can allow more fractionated/older air to be present in the observations than can be reproduced by TOMCAT. Note that these deviations will partially cancel when evaluating the AoA-GS relationship.

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