

## Supplement 2

### Trajectory analysis

Results of backward and forward simulations are presented as a supplement to Fig.5a.

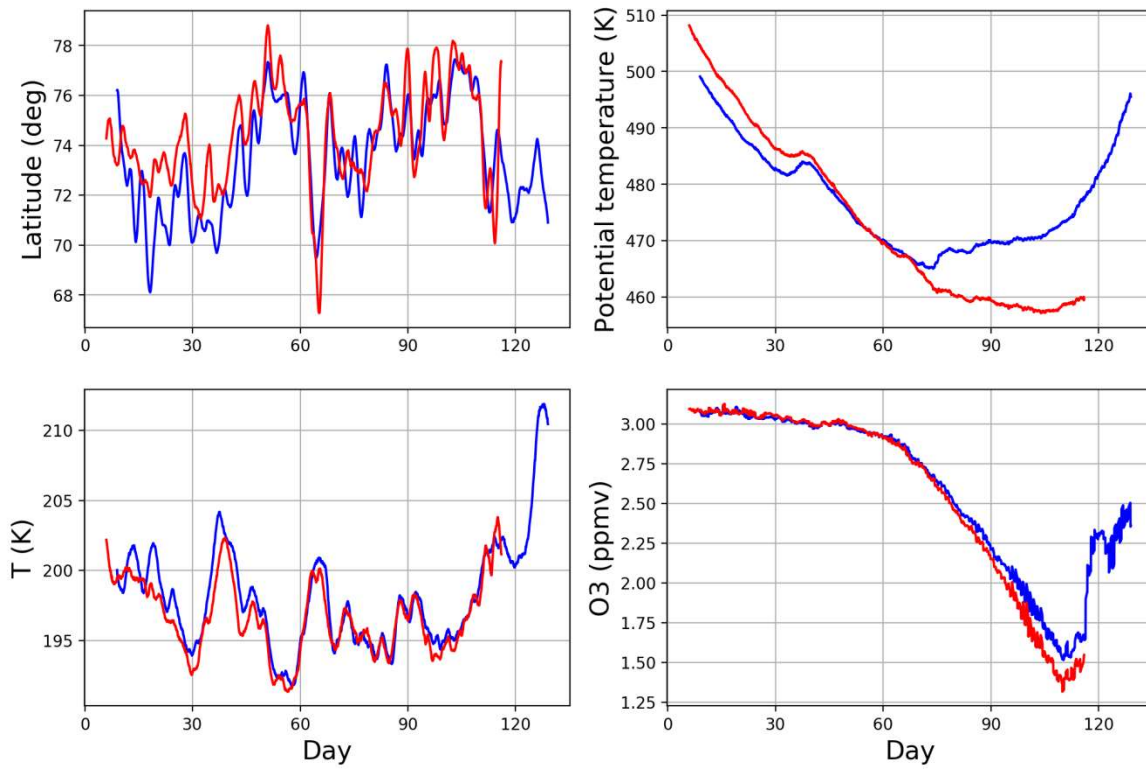


Fig.S2.1. Trajectory ensemble averaged latitude (top-left), potential temperature (top-right), temperature (bottom-left) and ozone (bottom-right); backward (red), forward (blue) for winter-spring 2010-2011.

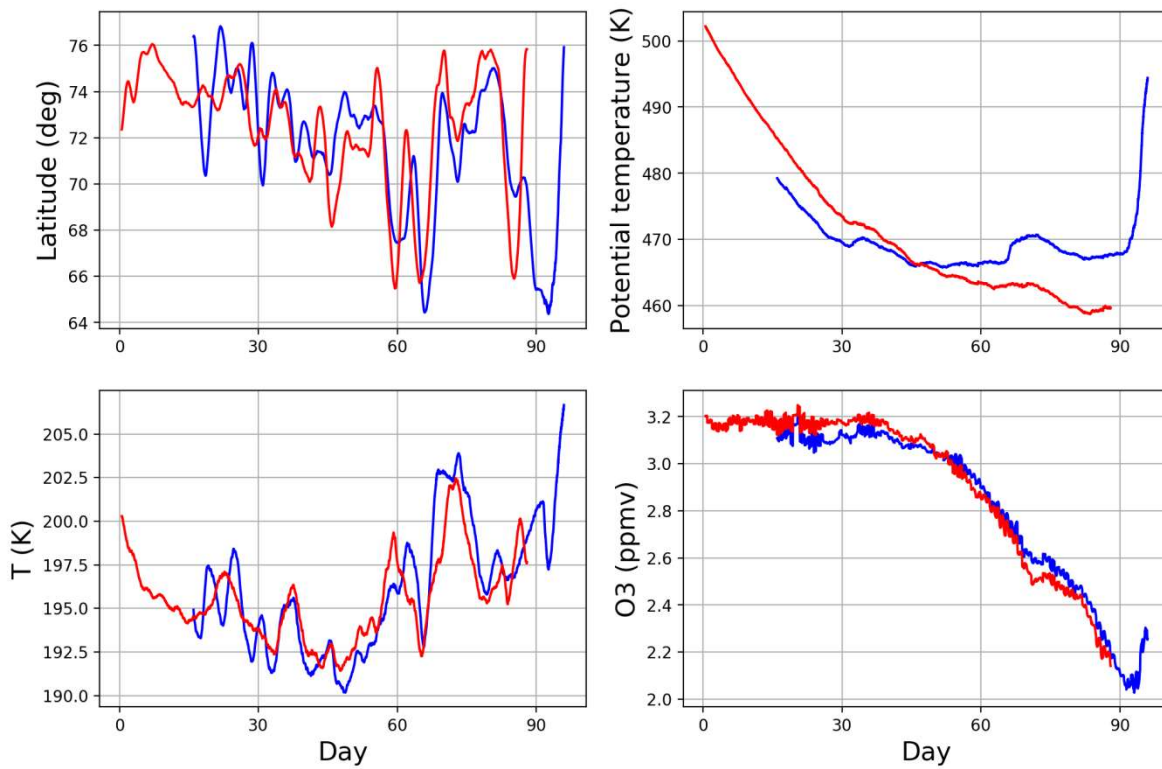


Fig.S2.2. Same as Fig.S2.1 for winter-spring 2015-2016.

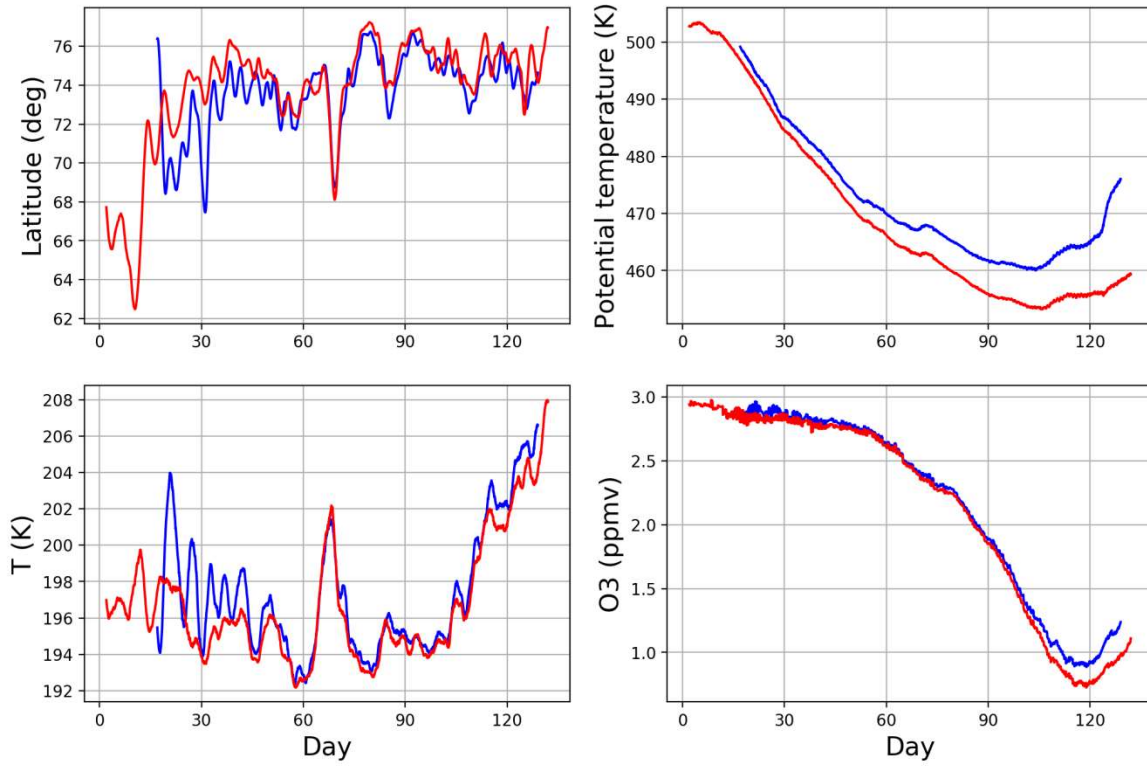


Fig.S2.3. Same as Fig. S2.1 for winter-spring 2019-2020.