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Supporting Information for

An indication of low ozone anomaly in Arctic spring in the QBO-westerly and solar-minimum years

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Introduction

Figures S1, S2, S3, and S4 are supplied to support Figures 7, 6, 7, and 8, respectively.

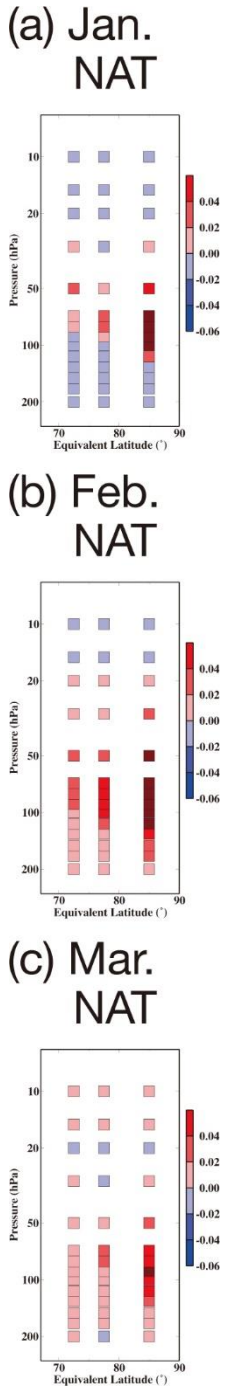

Figure S1. Equivalent latitude–height section of the NAT surface area anomaly (10^{-9} cm^2 cm^{-3}) in (a) January, (b) February, and (c) March for QBO-W/S_{min} from the REF-C1SD experiment.

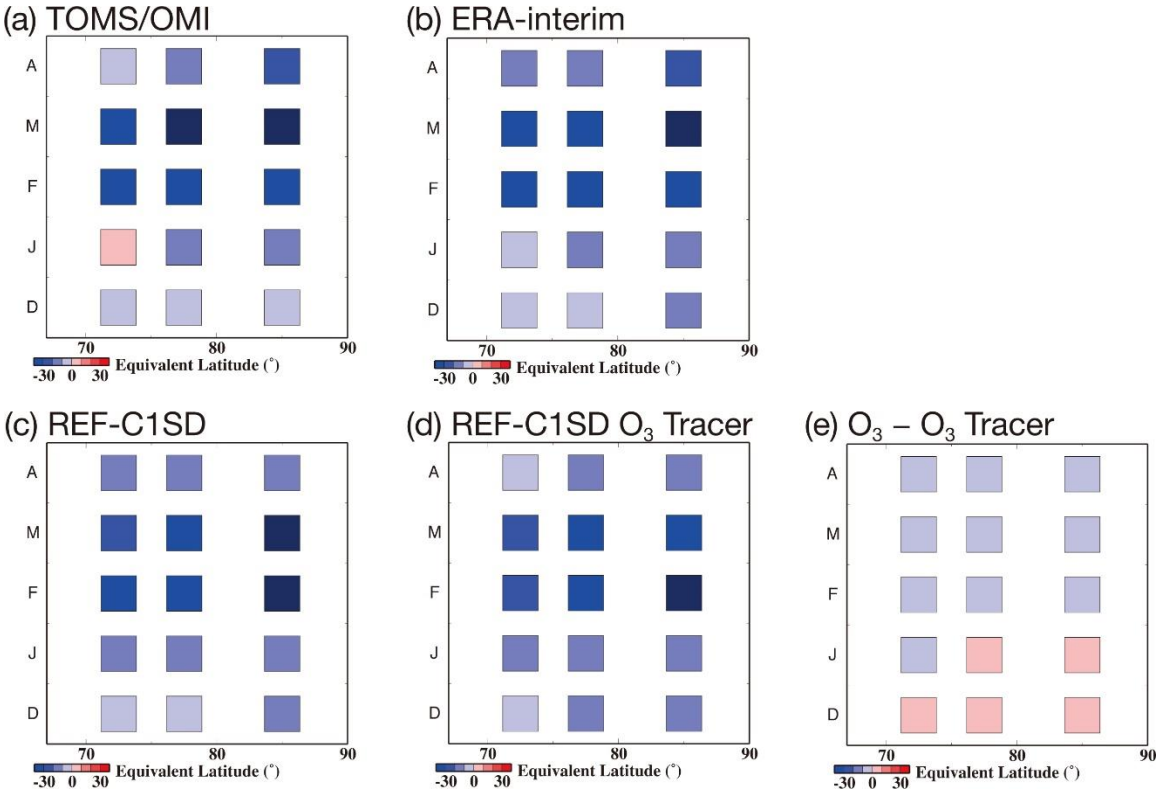

Figure S2. Same as Figure 6, but for the anomalies without 2009.

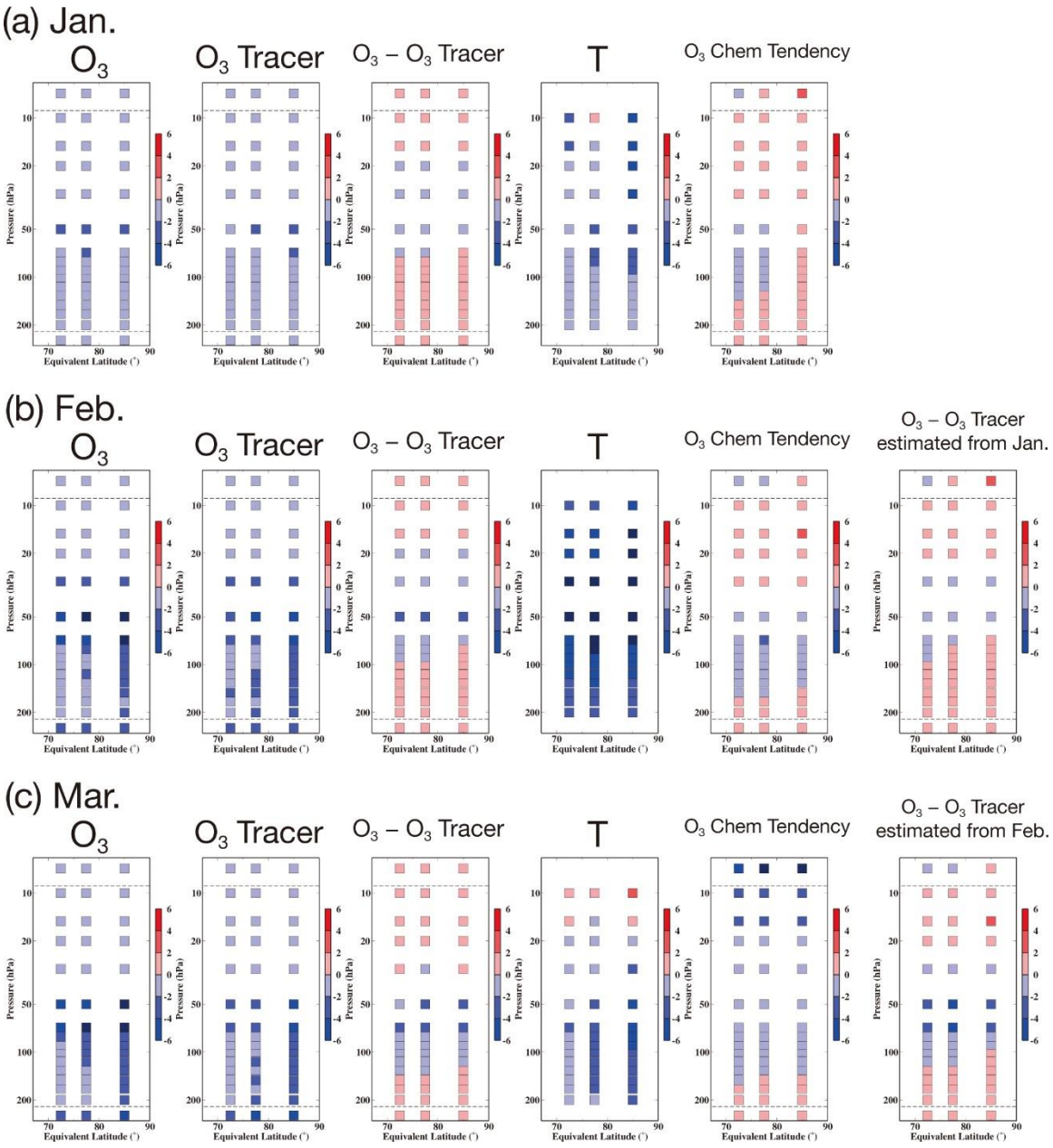

Figure S3. Same as Figure 7, but for the partial column mean anomaly without 2009.

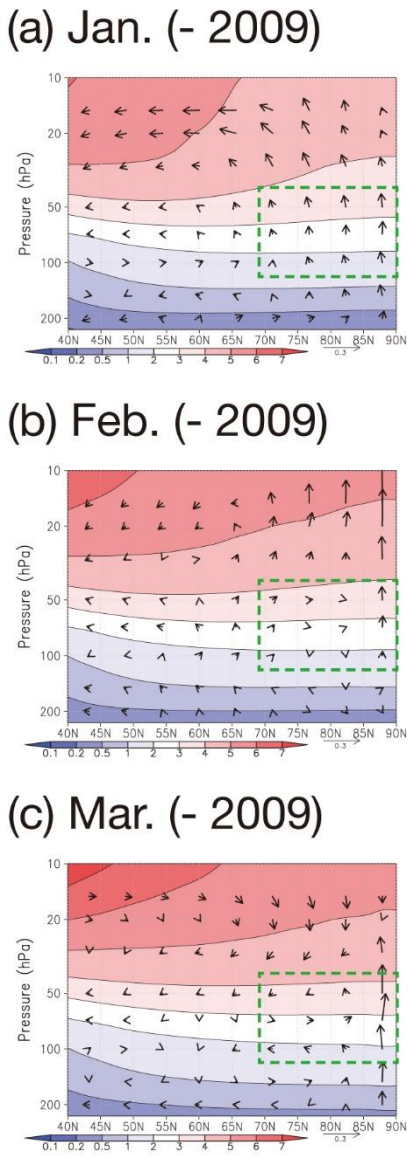

Figure S4. (a) The residual mean meridional circulation anomaly for QBO-W/S_{min} in January, but for anomalies without 2009. The vertical component of the residual circulation is magnified 200 times relative to the horizontal component, and the scale for the horizontal vector is shown at the bottom right of the panel in units of m/s. The contours/shadings indicate ozone mixing ratio averaged for 1979–2011 with units of DU. (b) Same as (a), but for February. (c) Same as (a), but for March.