



Supplement of

Distinct regional meteorological influences on low-cloud albedo susceptibility over global marine stratocumulus regions

Jianhao Zhang and Graham Feingold

Correspondence to: Jianhao Zhang (jianhao.zhang@noaa.gov)

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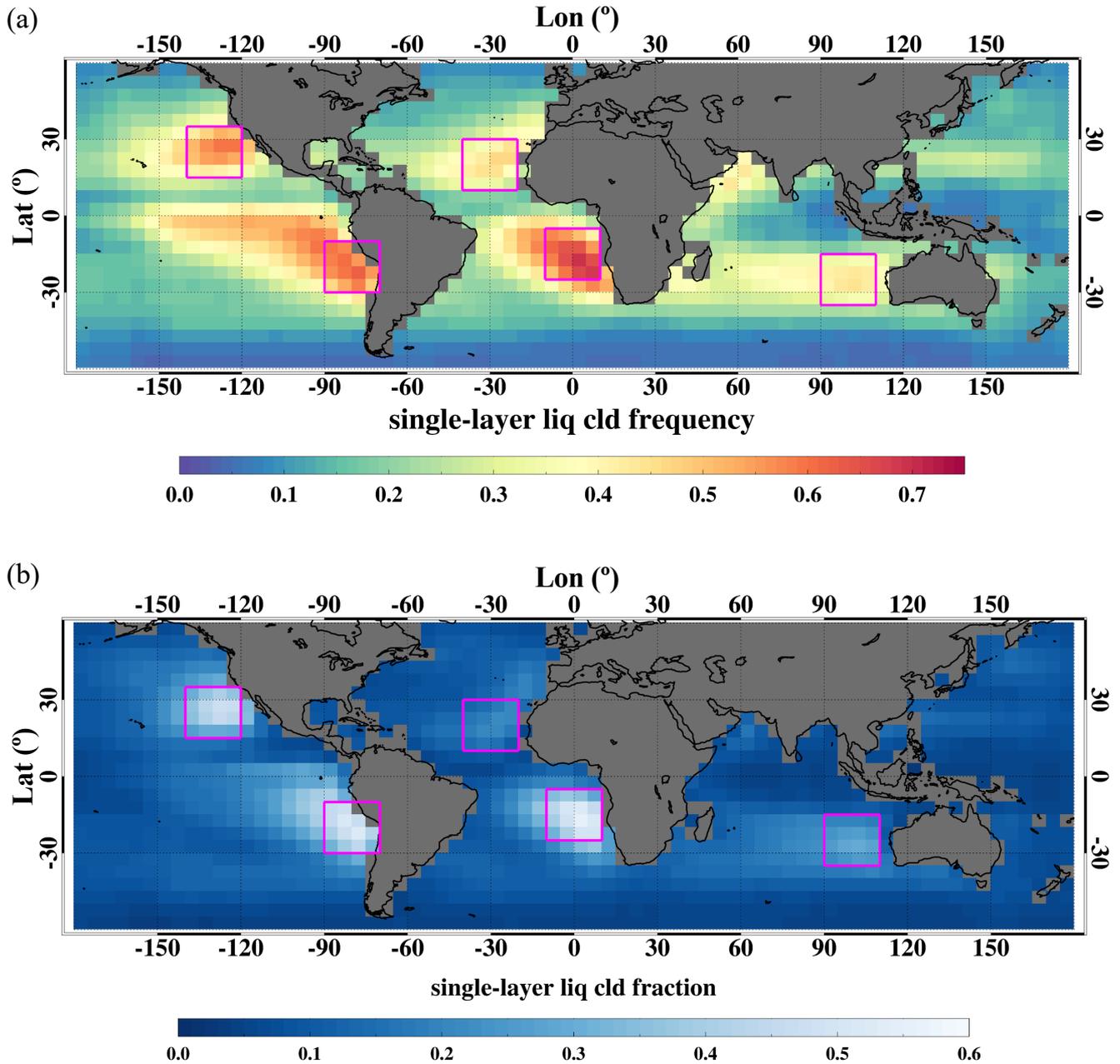


Figure S1. Geographical distribution of (a) annual-mean frequency of occurrence and (b) annual-mean fraction of single-layer liquid cloud over $5^\circ \times 5^\circ$ areas, derived from 8 years (2005–2012) of Terra & Aqua datasets. Magenta boxes indicate five $20^\circ \times 20^\circ$ marine stratocumulus regions analyzed further in this study.

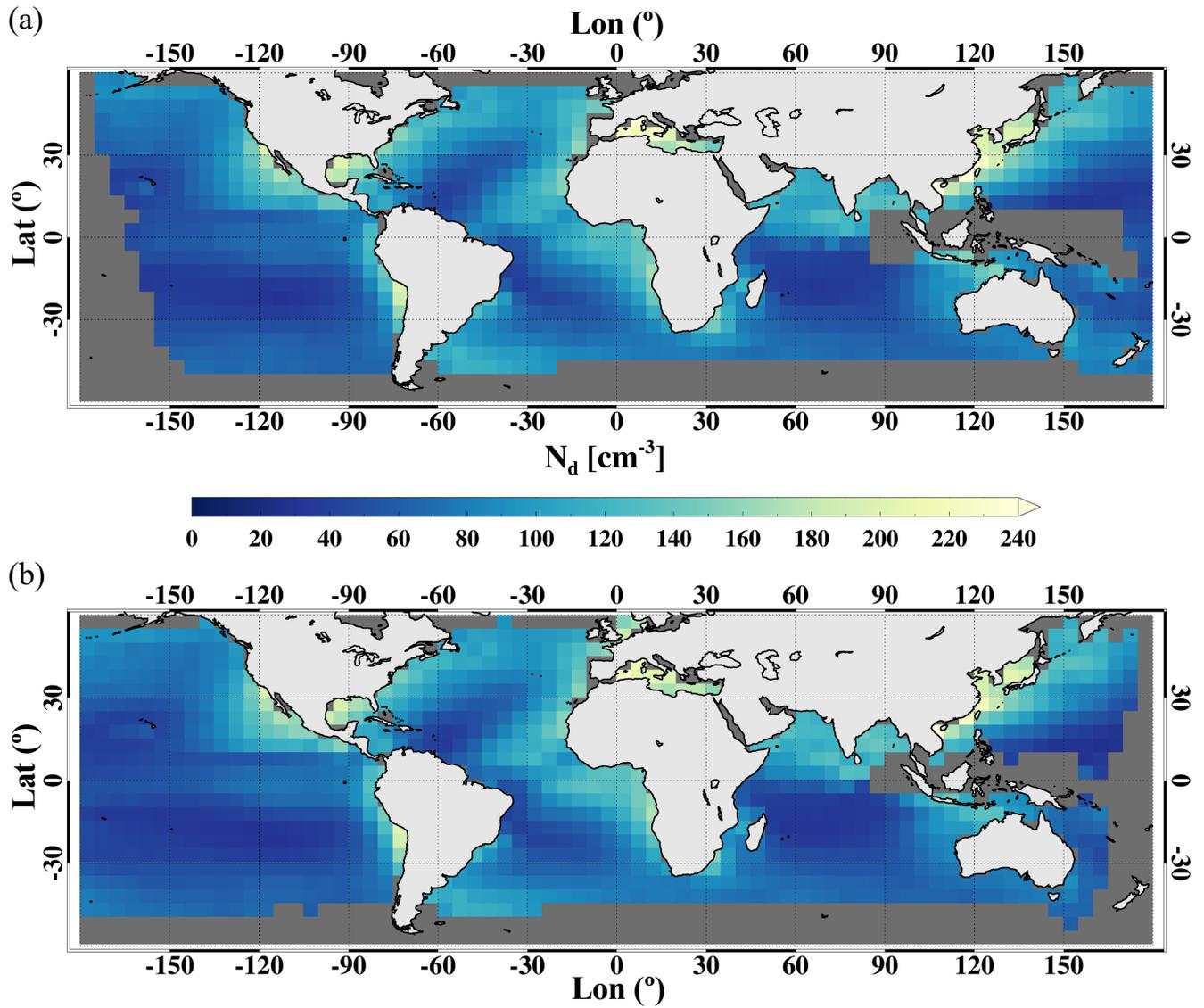


Figure S2. Geographical distribution of annual-mean cloud droplet number concentration (N_d) of single-layer liquid cloud, derived from 8 years (2005–2012) of (a) Aqua and (b) Terra datasets. Only $5^\circ \times 5^\circ$ areas with SLLC frequency of occurrence greater than 0.1 are shown.

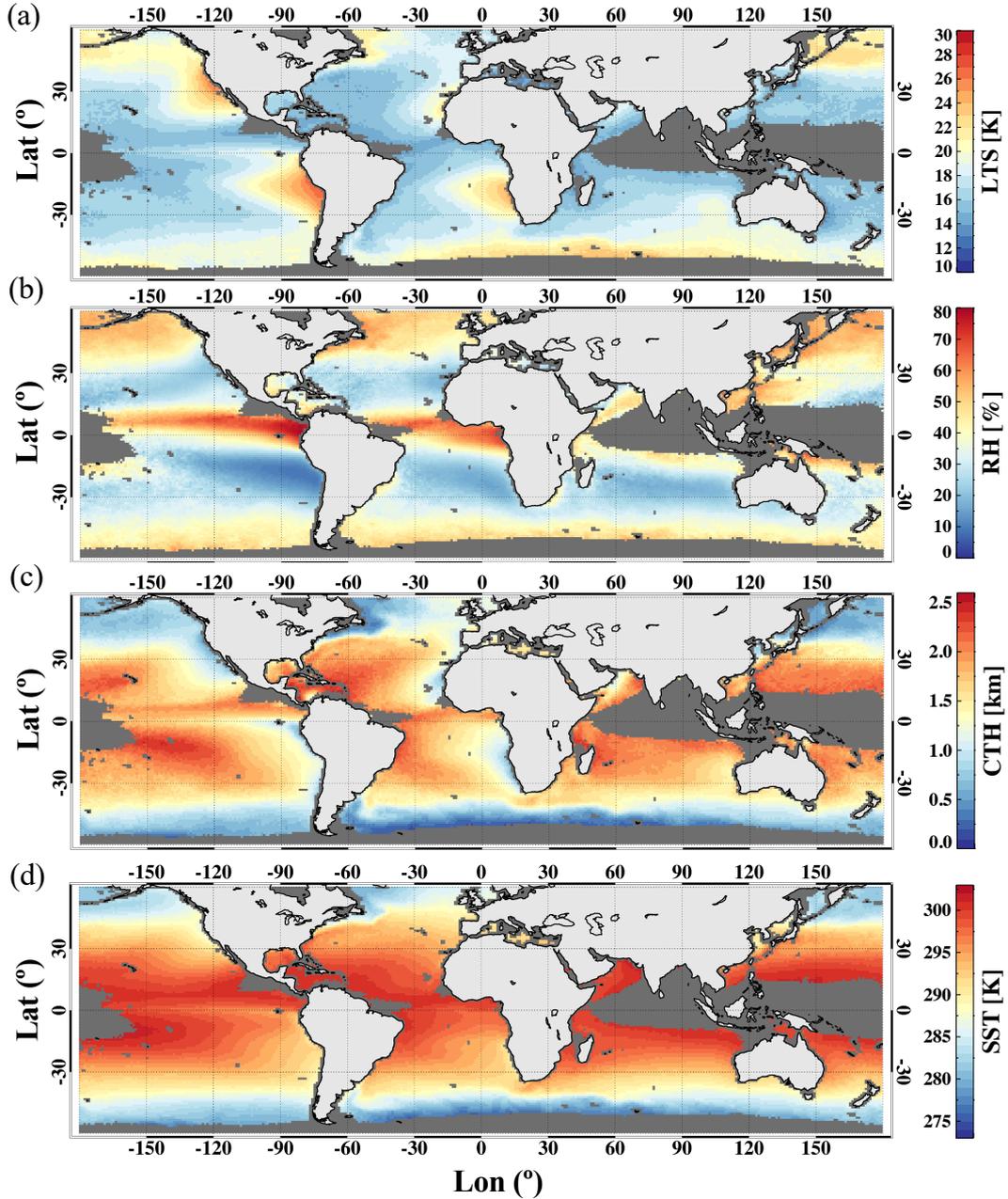


Figure S3. ERA5 climatology (8-year mean) of large-scale meteorological conditions when single-layer liquid cloud occurs during Terra and Aqua overpasses (10:30 and 13:30 local time) for (a) LTS, (b) RH_{ft} , (c) CTH and (d) SST. Only $1^\circ \times 1^\circ$ areas with SLLC frequency of occurrence greater than 0.1 are shown.

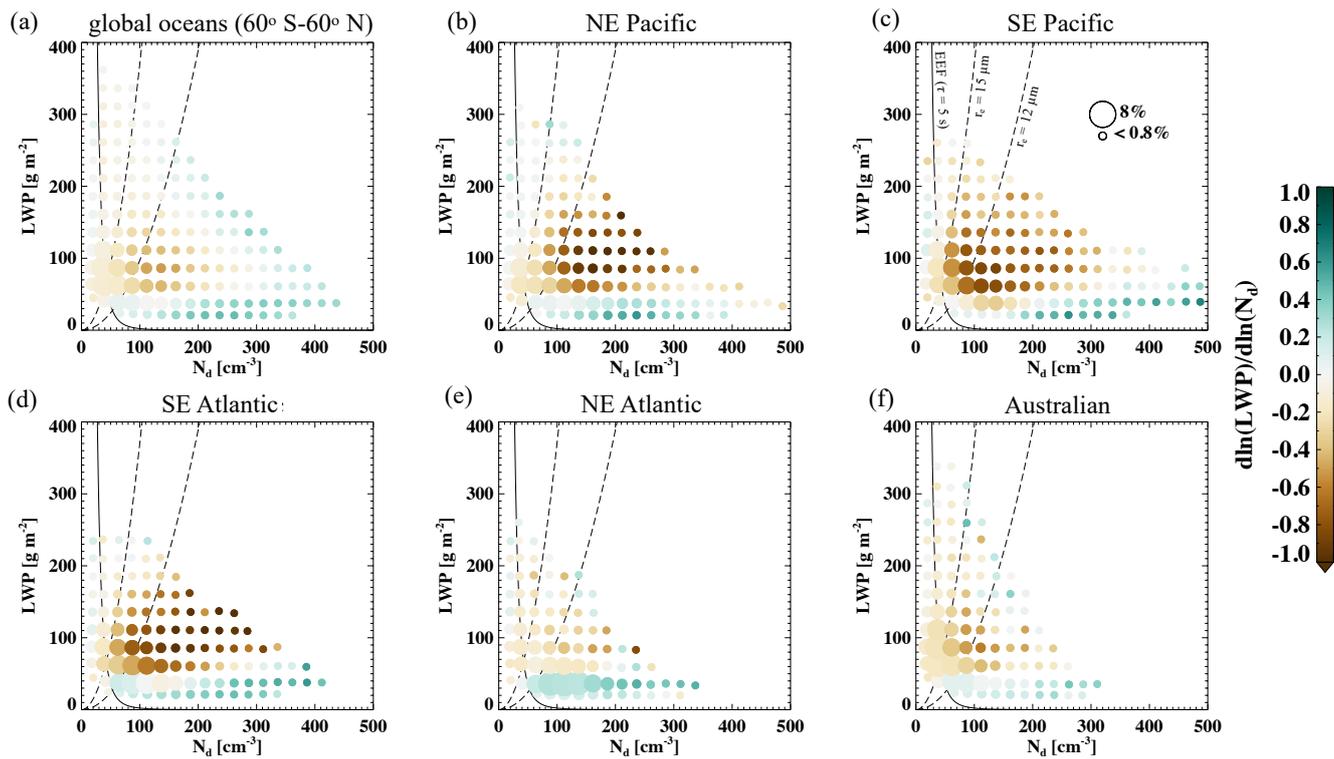


Figure S4. As in Fig. 2 but for $d\ln(\text{LWP})/d\ln(N_d)$.

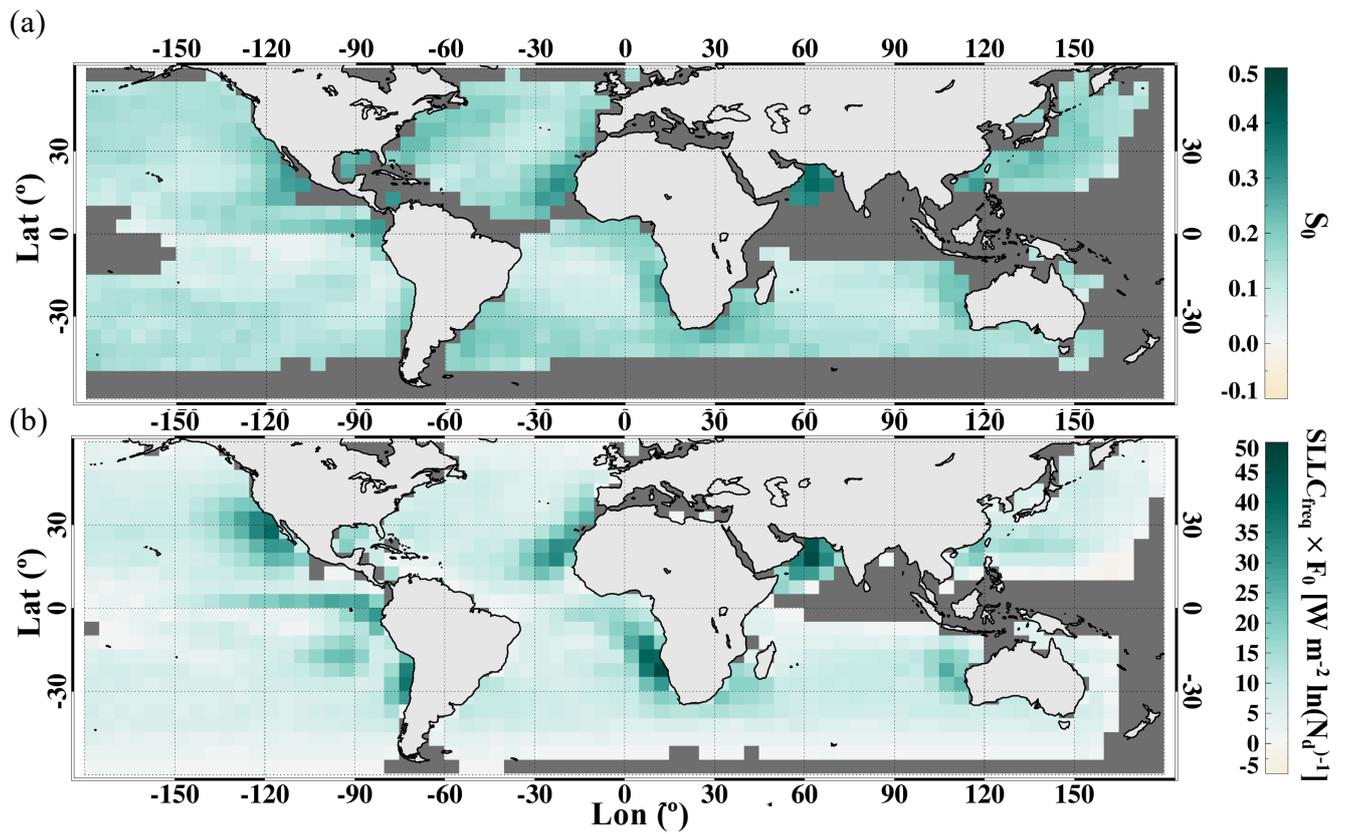


Figure S5. As in Fig. 1 but derived from the Terra dataset (2005-2012).

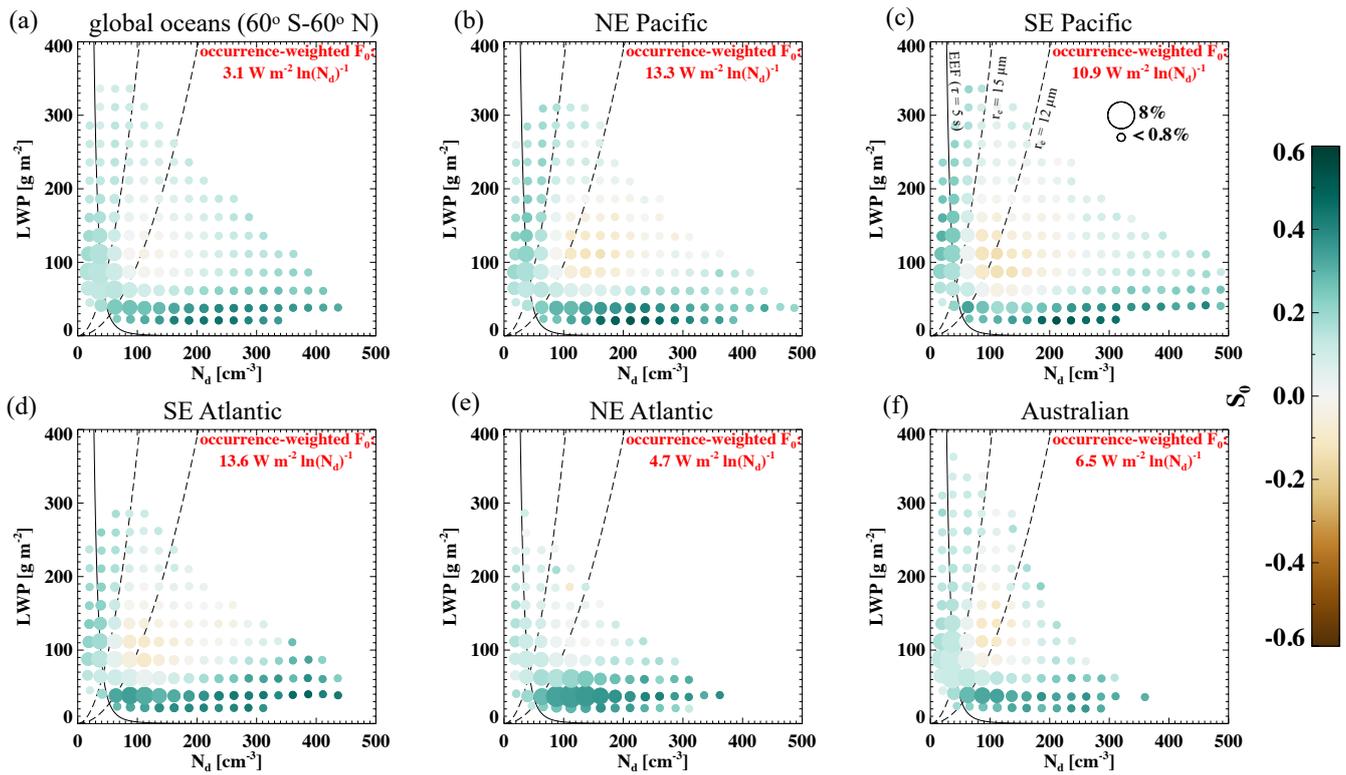


Figure S6. As in Fig. 2 but derived from the Terra dataset (2005-2012).

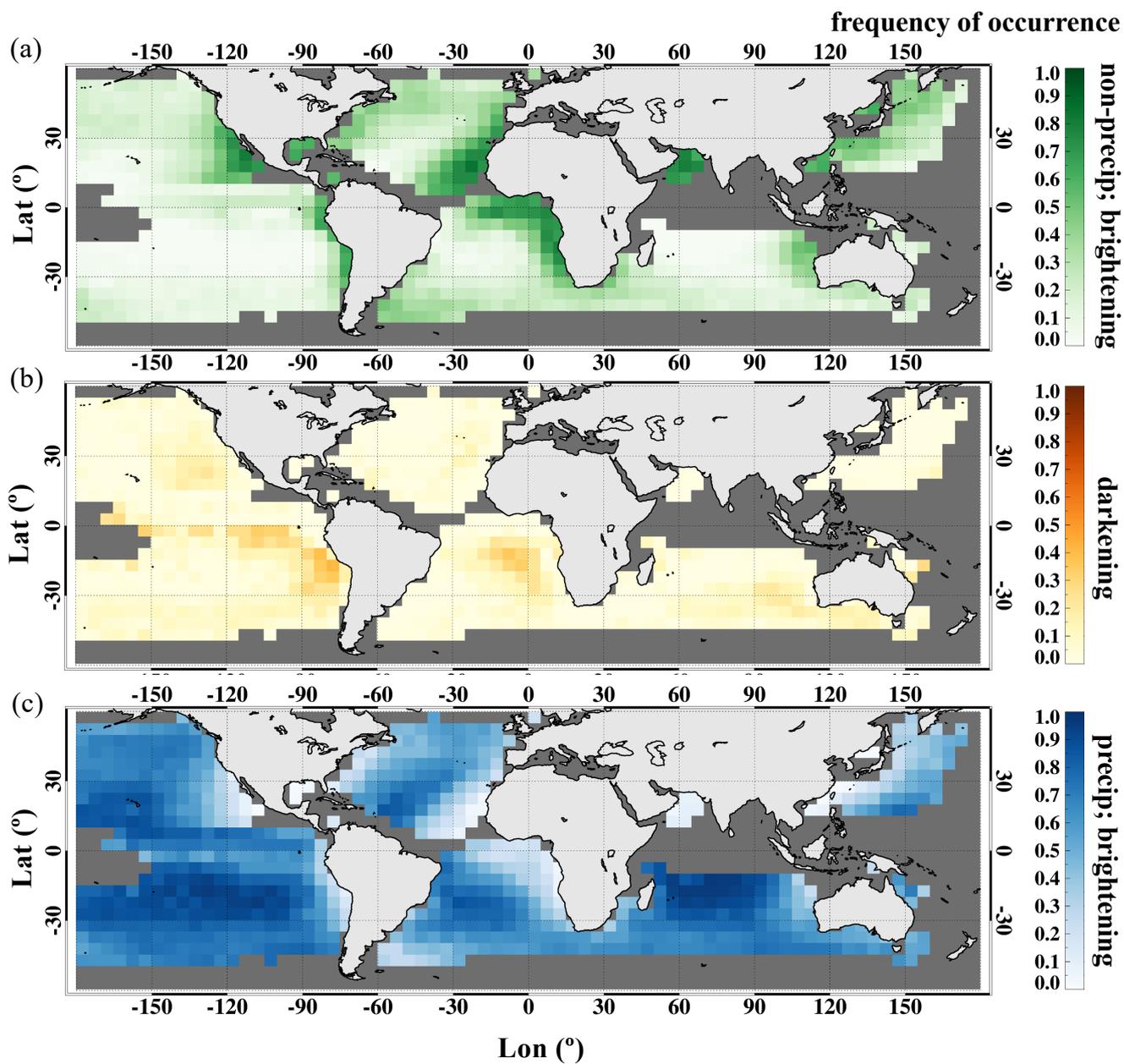


Figure S7. As in Fig. 3 but derived from the Terra dataset (2005-2012).

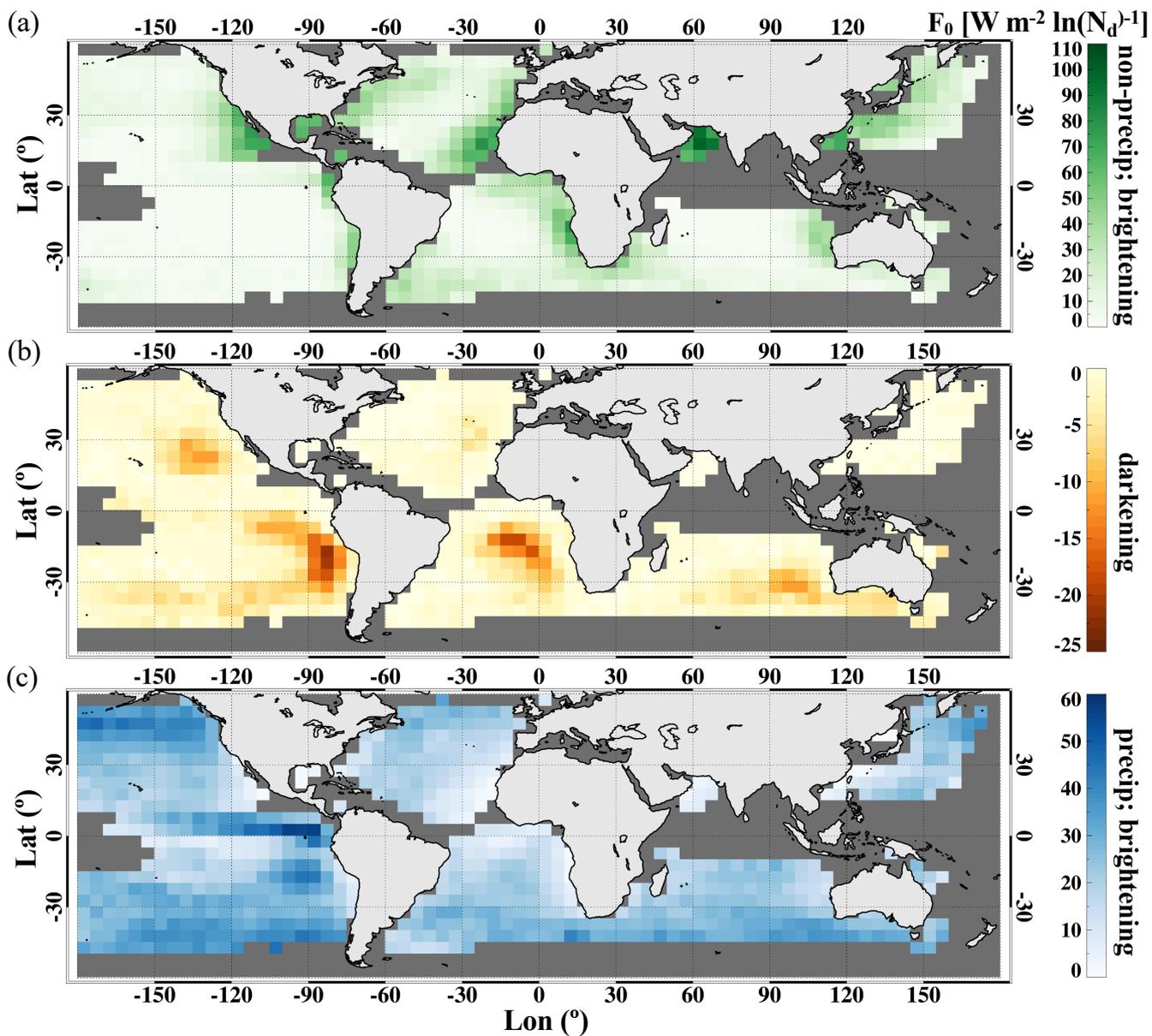


Figure S8. As in Fig. 4 but derived from the Terra dataset (2005-2012).

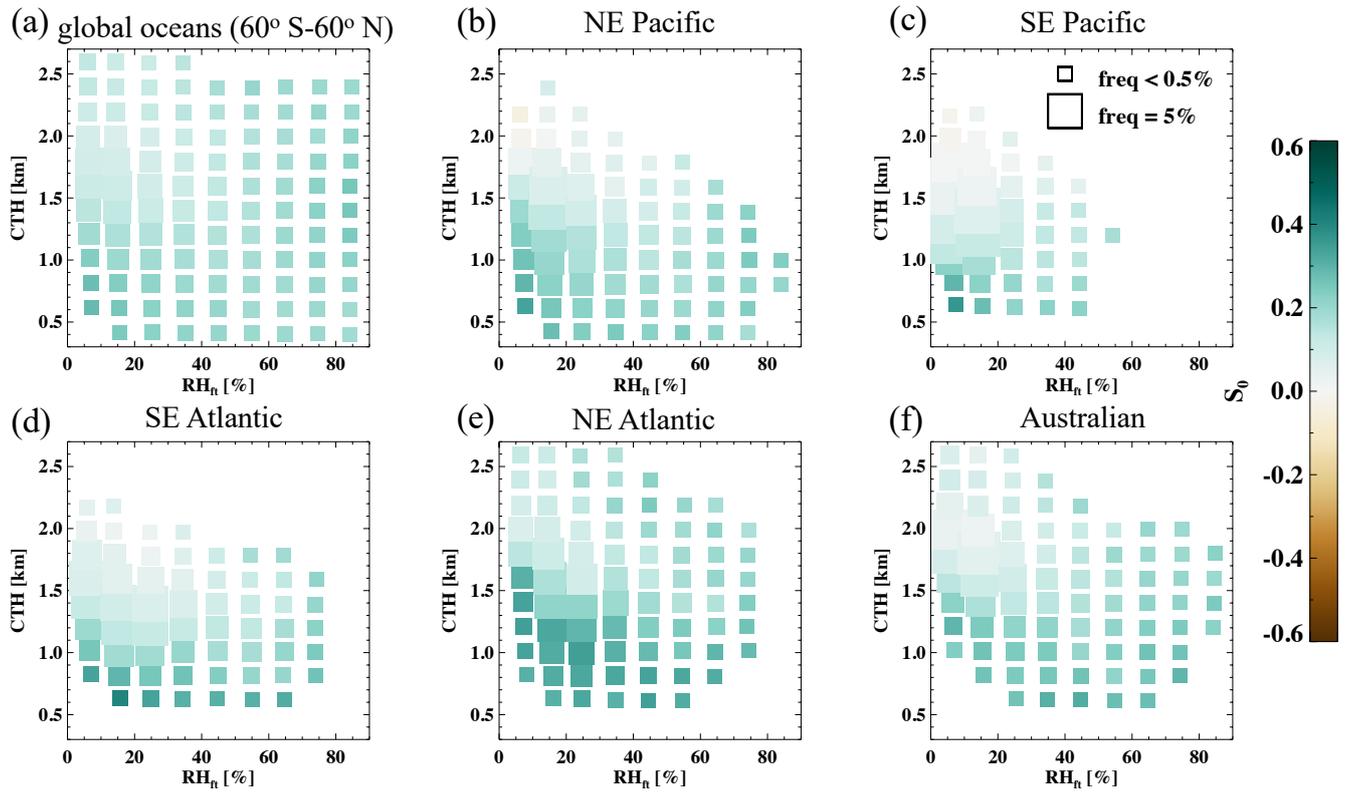


Figure S9. As in Fig. 5 but derived from the Terra dataset (2005-2012).

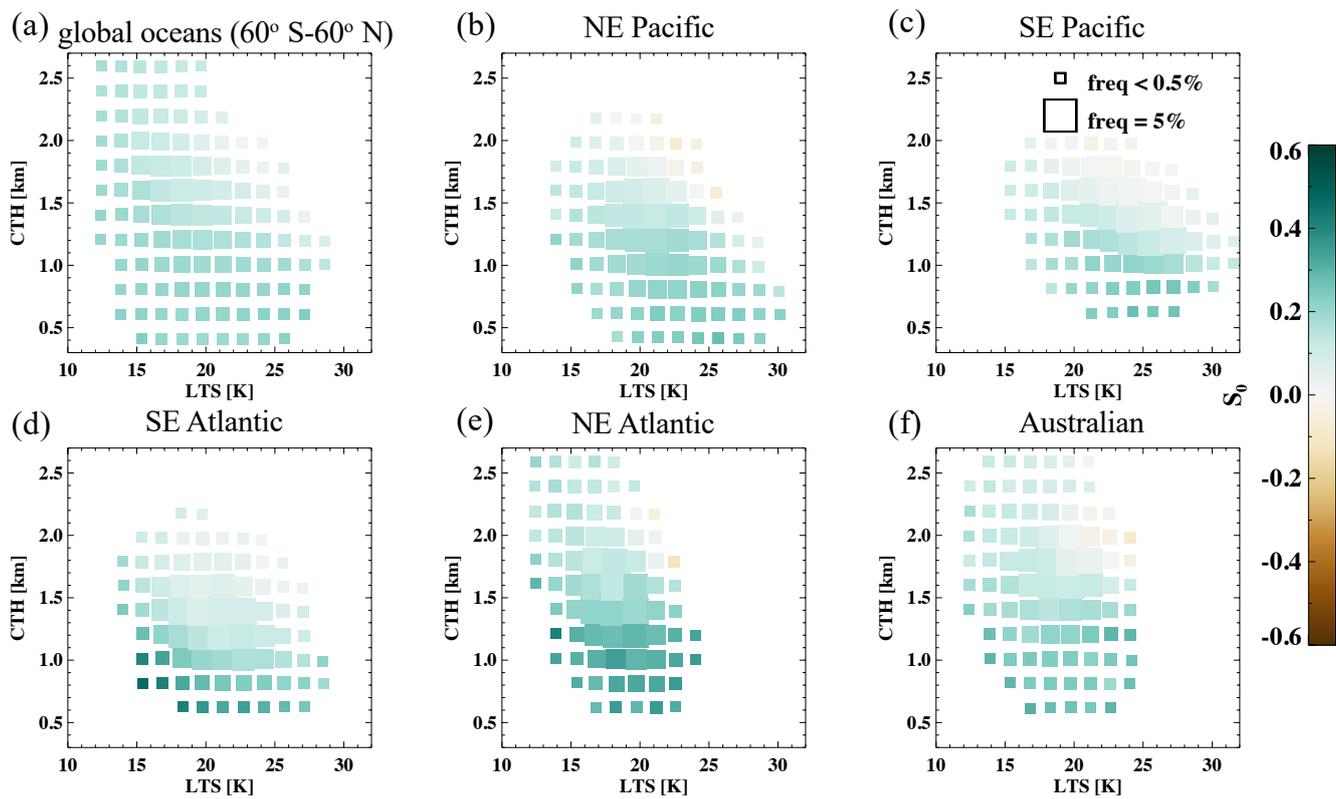


Figure S10. As in Fig. 6 but derived from the Terra dataset (2005-2012).

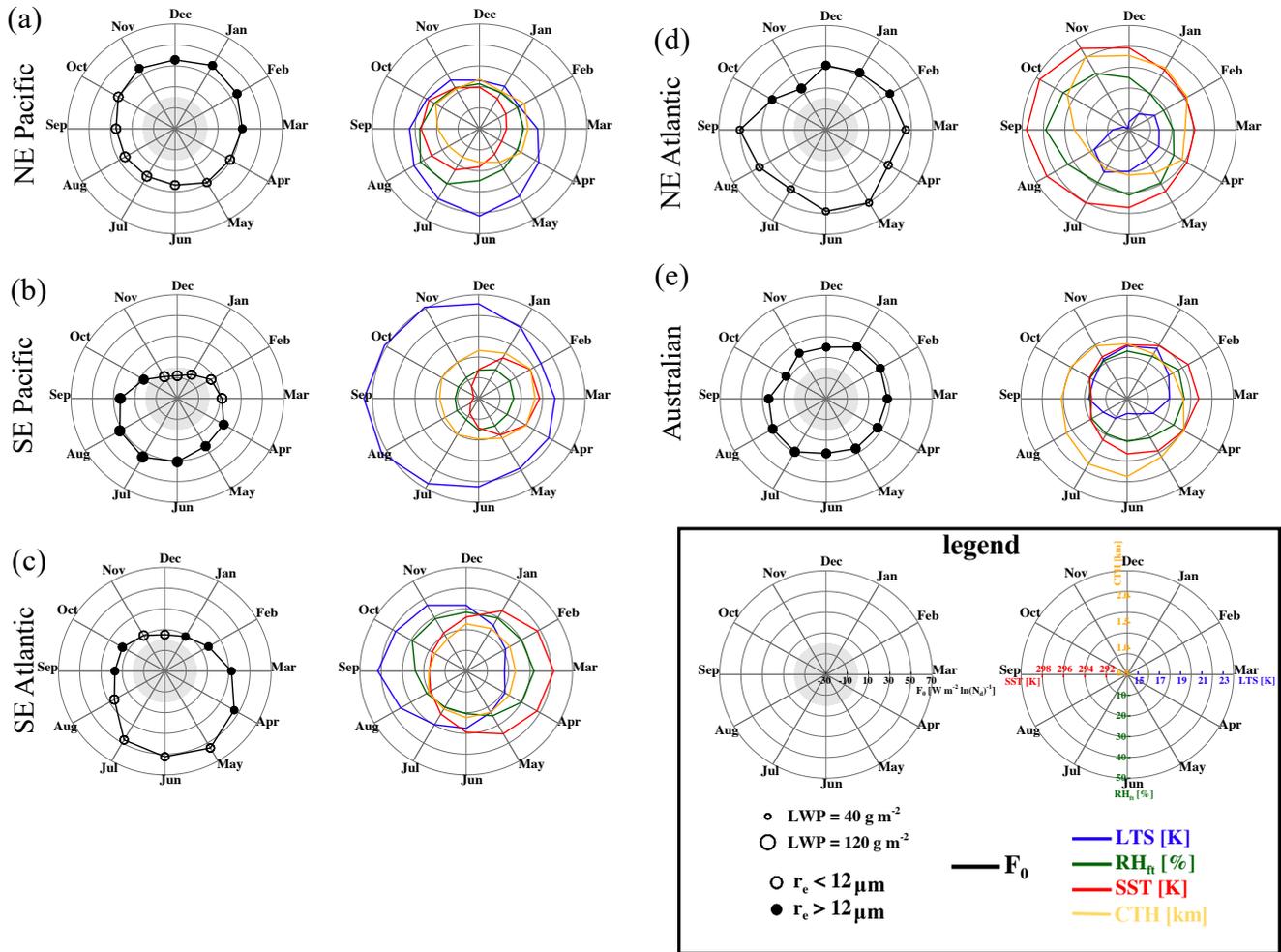


Figure S11. As in Fig. 7 but derived from the Terra dataset (2005-2012).

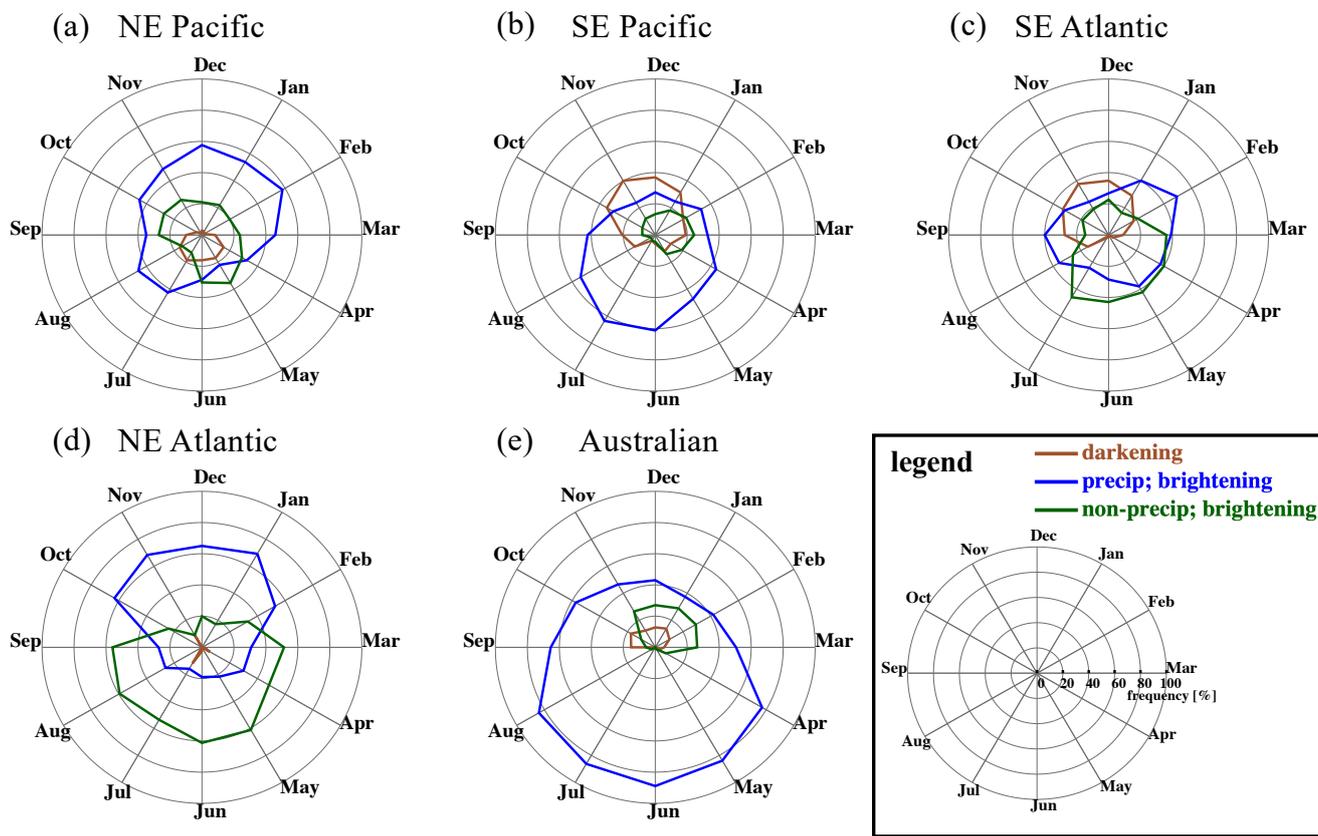


Figure S12. As in Fig. 8 but derived from the Terra dataset (2005-2012).

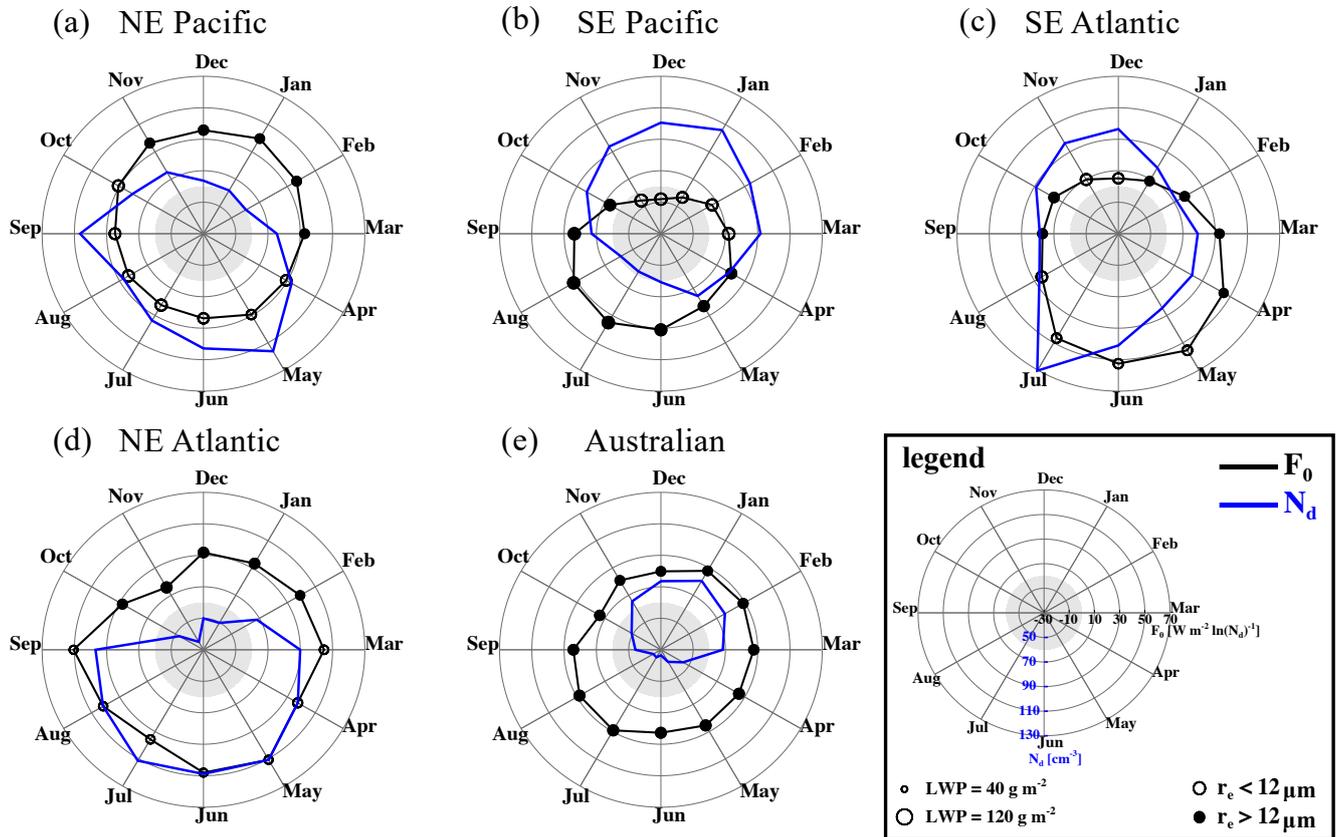


Figure S13. As in Fig. 9 but derived from the Terra dataset (2005-2012).