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Robust evidence for reversal of the trend in aerosol effective climate forcing

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In this section, supplementary information is presented. Fig. S1 shows the results presented in Fig. 1 to 4 of the main manuscript combined into one figure for better comparability.

Fig. S2, S3, and S4 show the trends that are presented in relative units in Fig. 1, 2, and 3 of the main manuscript, but in absolute units.

Fig. S5 compares the trends in the RFMIP piClim-histall experiment to the CERES retrievals in order to assess the relative importance of the aerosols to the other forcing agents.

Fig. S6, S7 and S8 assess the ERF trends for the aerosol ERF for solar clear sky (Fig. S6), solar all sky (Fig. S7) and net fluxes (Fig. S8) for the individual models. In a similar way, Fig. S9 to S11 investigate the noise within one model ensemble, choosing here the NorESM and showing the trends for individual ensemble members.

Table S1 reports the trends as Table 1 in the main text, but in absolute units.

(a) SO_2 emissions (μg m^{-2} day^{-1} yr^{-1})			(b) OC emissions (μg m^{-2} day^{-1} yr^{-1})			(c) BC emissions (μg m^{-2} day^{-1} yr^{-1})		
Decreases	Increases	Global	Decreases	Increases	Global	Decreases	Increases	Global
-2429	+2118	-474	-33	+344	+39	-40	+138	+12
(d) MISR AOD (yr^{-1})			(e) MISR AODFM (yr^{-1})					
-0.00162	+0.00455	-0.000428	-0.00134	+0.00243	-0.00041			
(f) MODIS AOD (yr^{-1})			(g) MODIS AODFM (yr^{-1})			(h) PMAp AOD (yr^{-1})		
-0.00167	+0.00700	+0.00033	-0.00104	+0.00557	+0.00040	-0.00363	+0.000071	-0.00180
(i) $N_{\rm d}$ (cm^{-3} yr^{-1})			(j) LWP (g kg^{-1} yr^{-1})			(k) Cloud fraction (% yr^{-1})		
-0.455	+0.118	-0.072	-0.235	-0.137	-0.063	-0.036	+0.016	-0.050

Table S1. As Table 1 in the main text, but trends in absolute units.

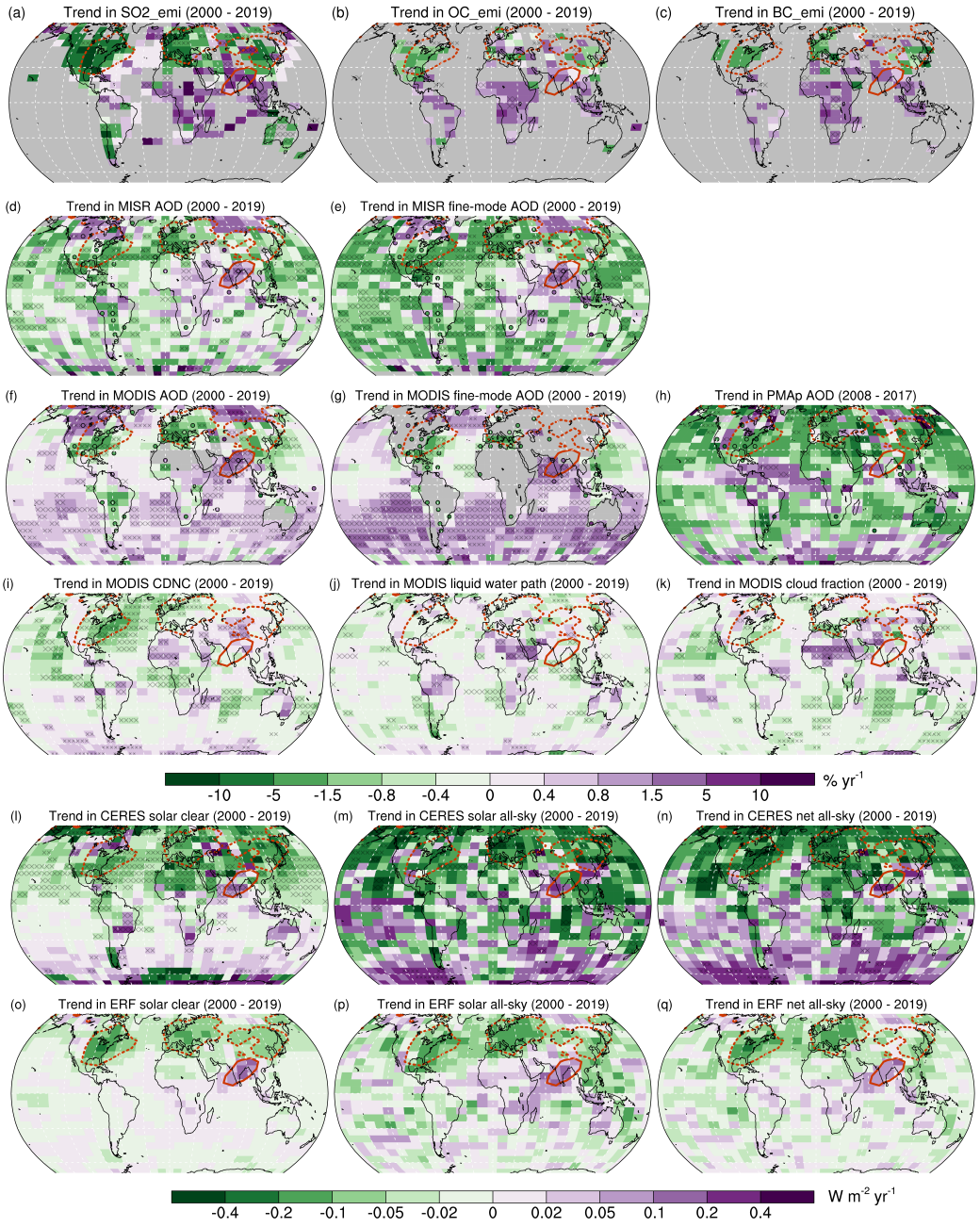

Figure S1. As Fig. 1 to 4 from main text, but combined into one figure.

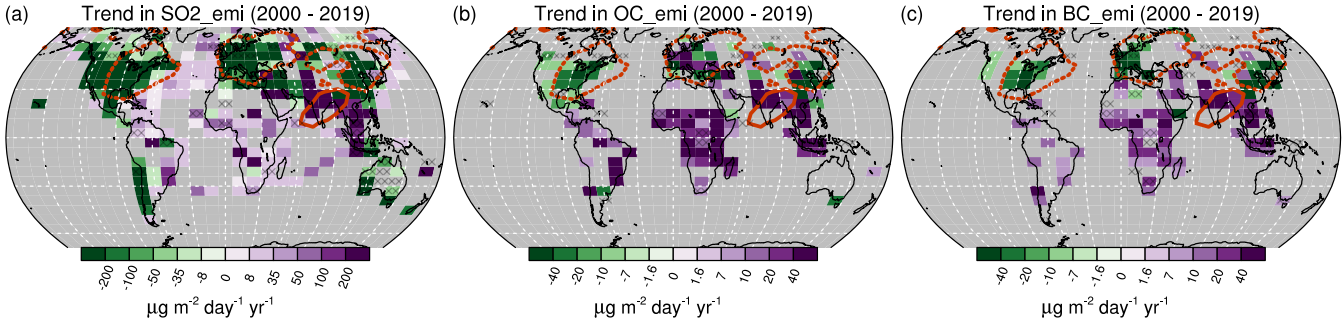

Figure S2. As Fig. 1, but in absolute units.

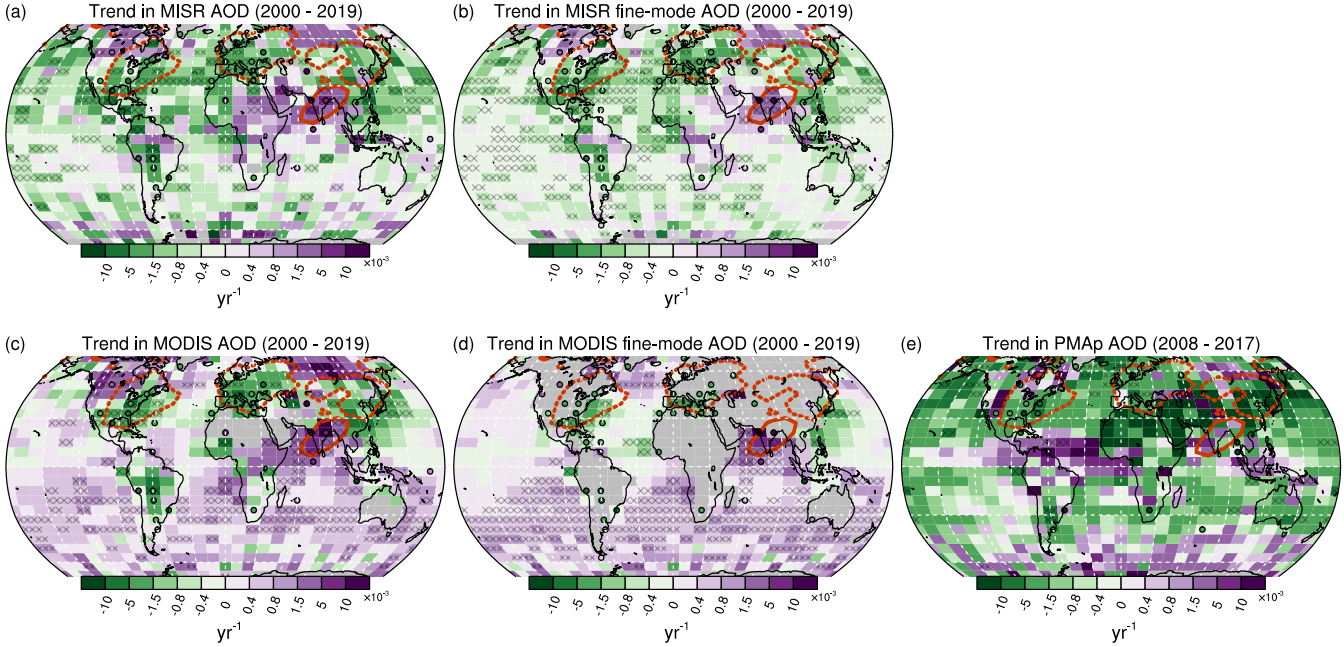

Figure S3. As Fig. 2, but in absolute units.

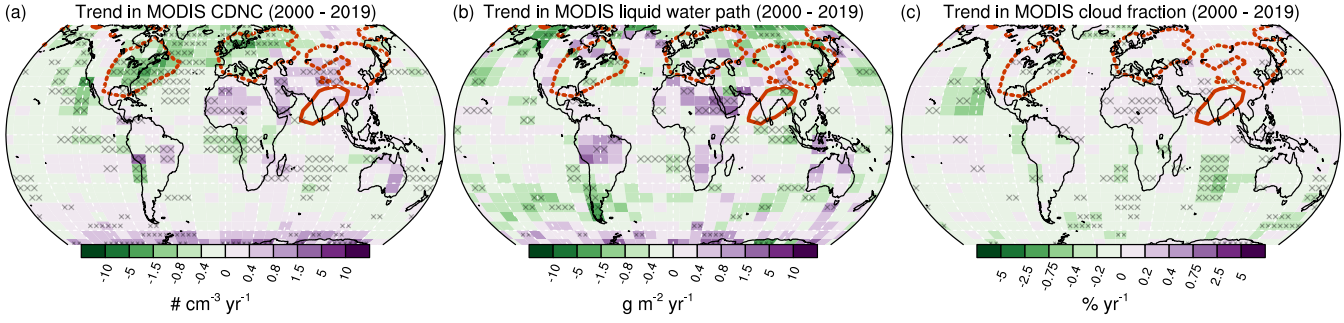

Figure S4. As Fig. 3, but in absolute units.

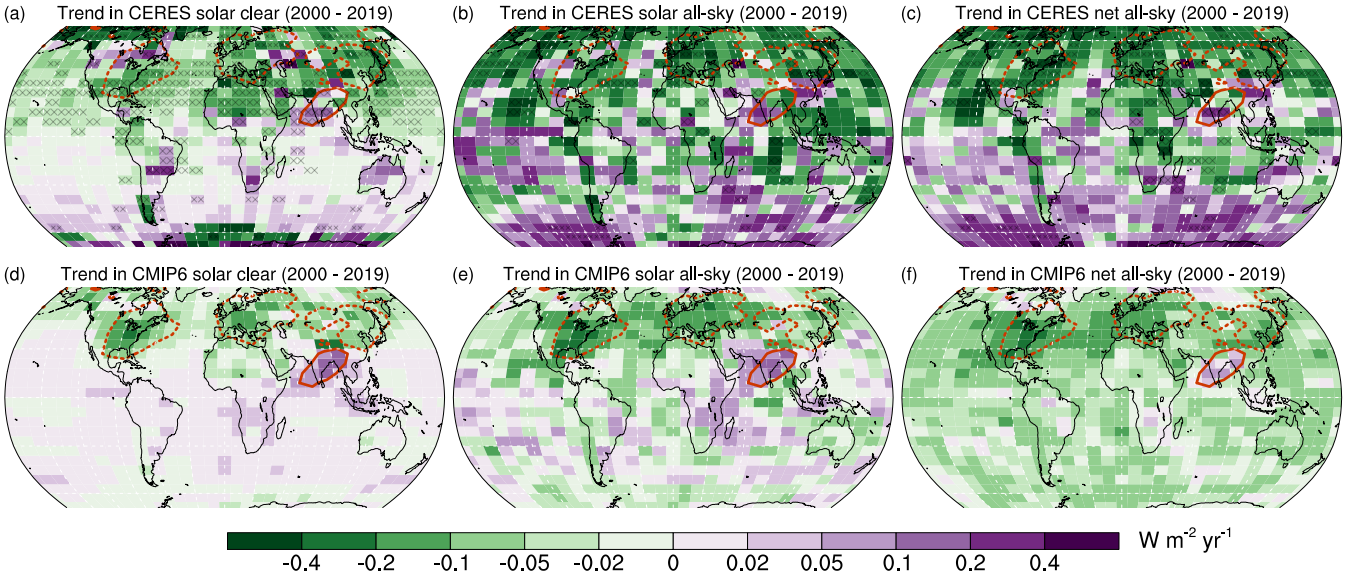

Figure S5. As Fig. 4, making use of the RFMIP piClim-histall experiment that includes all forcing agents.

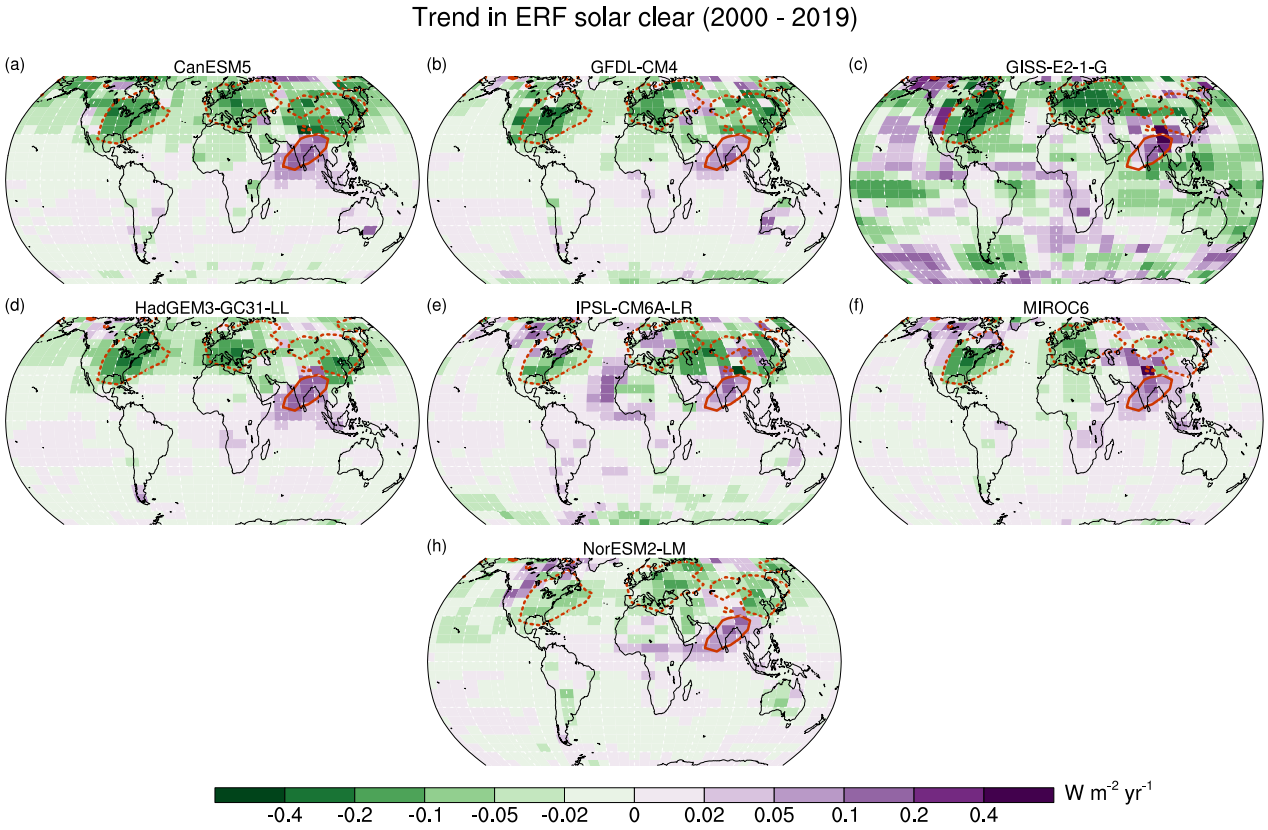

Figure S6. As Fig. 4d, but for the individual models.

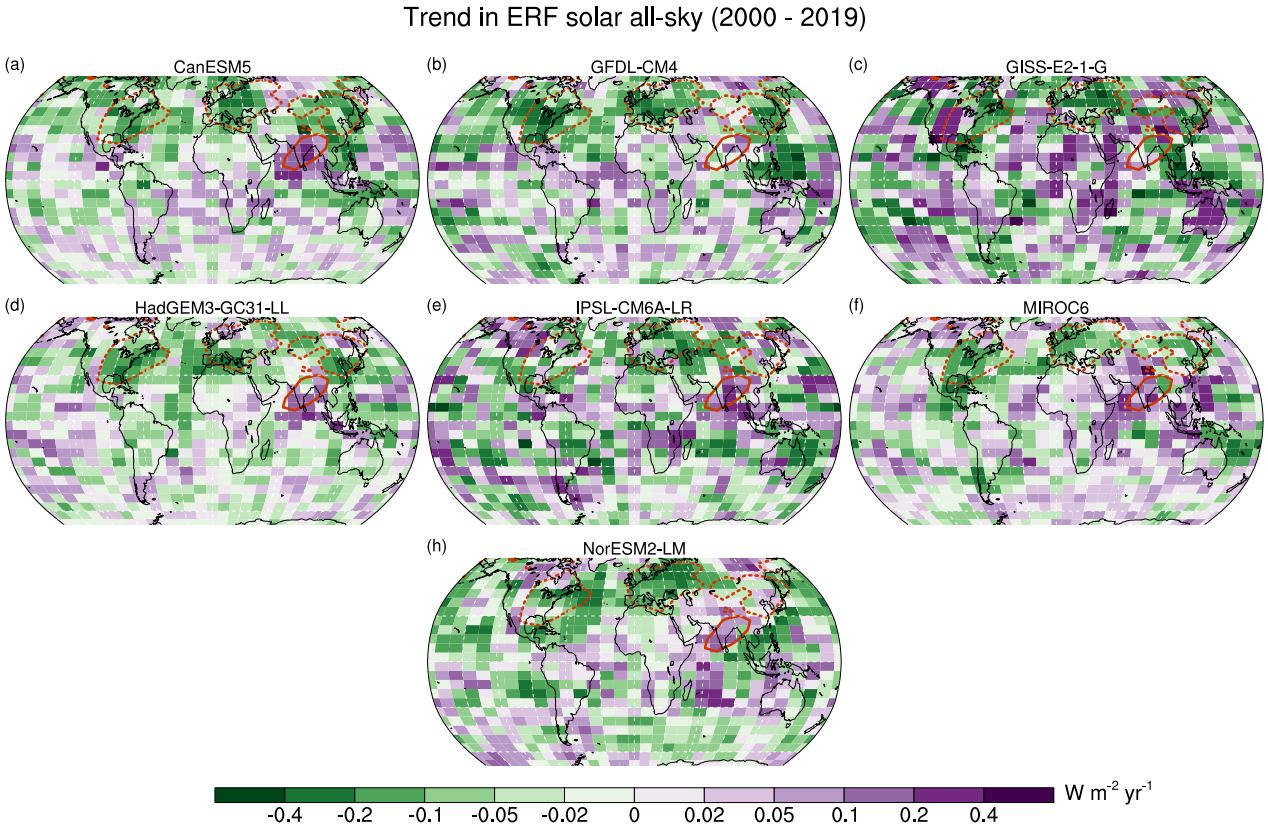

Figure S7. As Fig. 4e, but for the individual models.

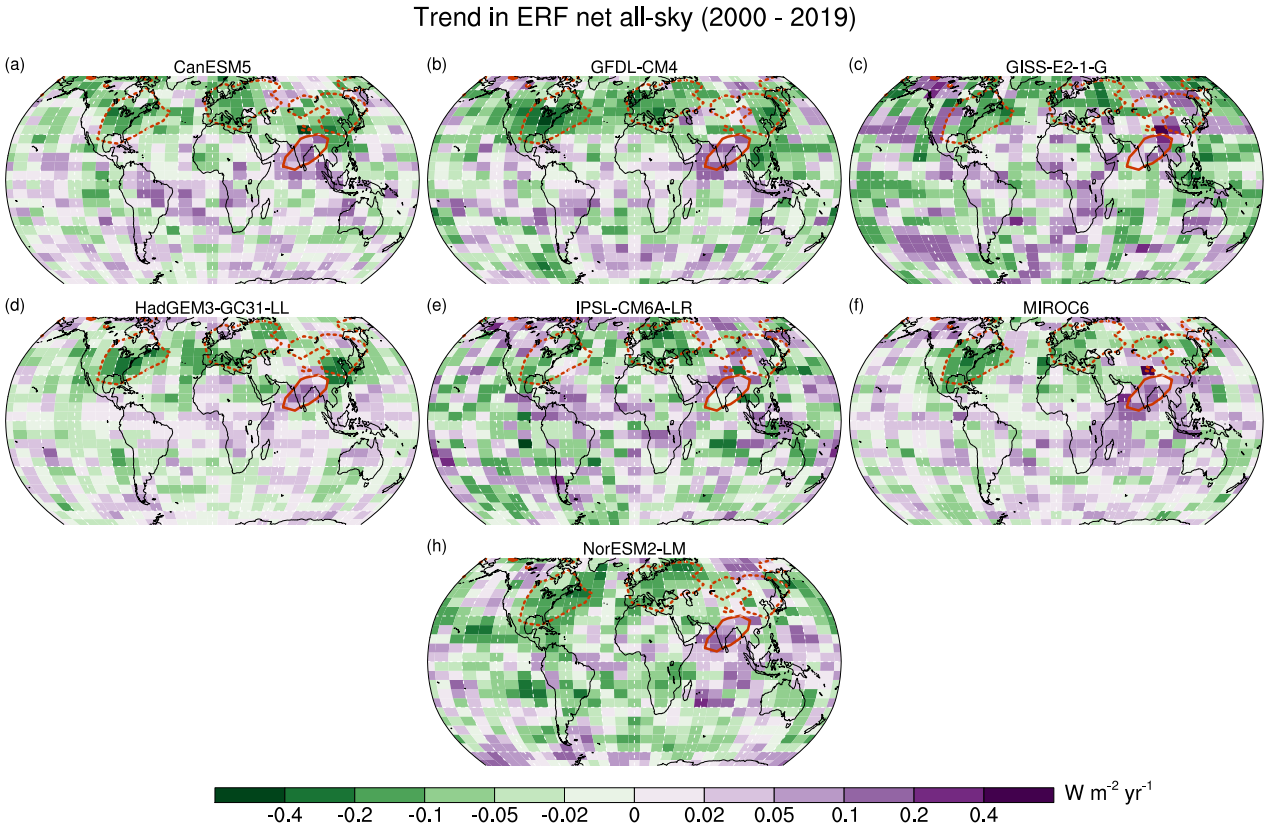

Figure S8. As Fig. 4f, but for the individual models.

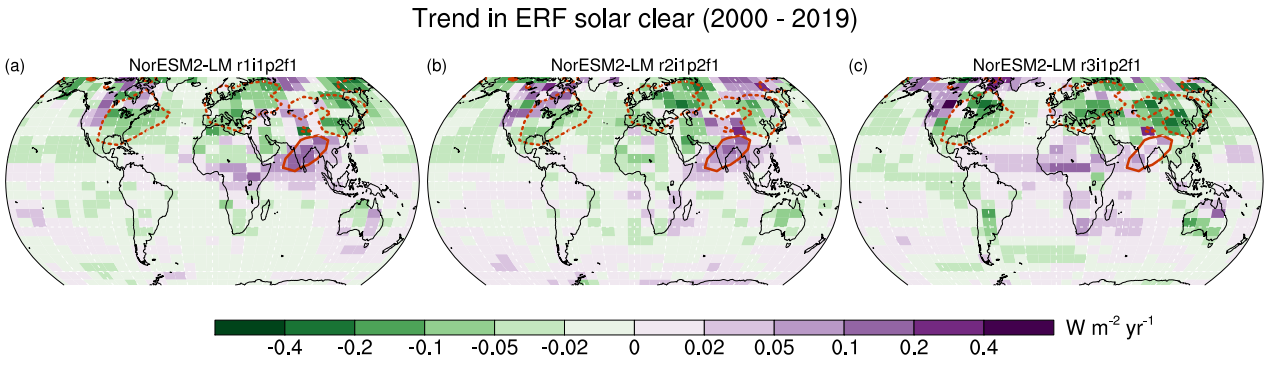

Figure S9. As Fig. 4d, but for the individual ensemble members for the NorESM.

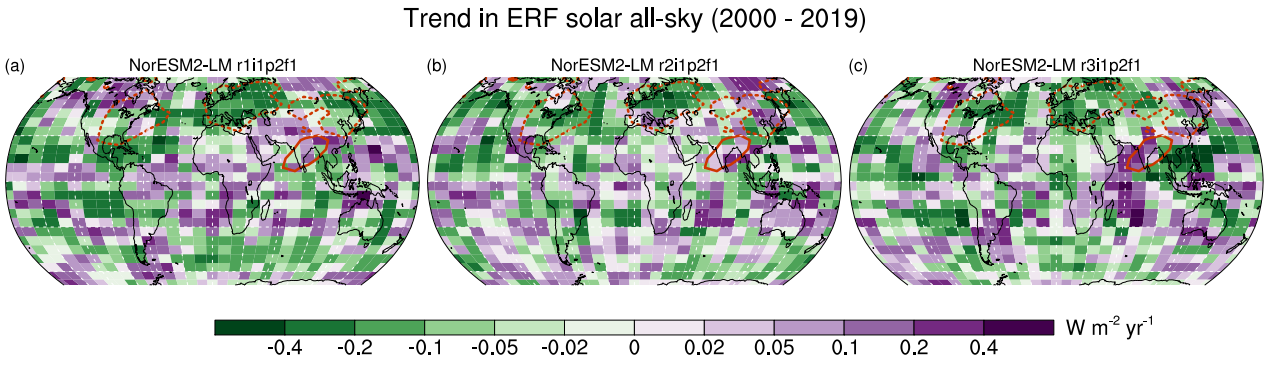

Figure S10. As Fig. 4e, but for the individual ensemble members for the NorESM.

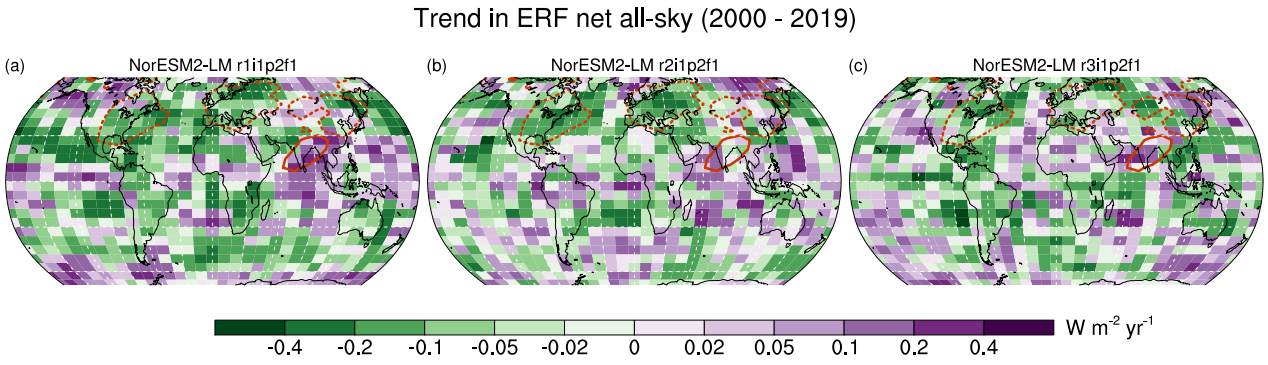

Figure S11. As Fig. 4f, but for the individual ensemble members for the NorESM.