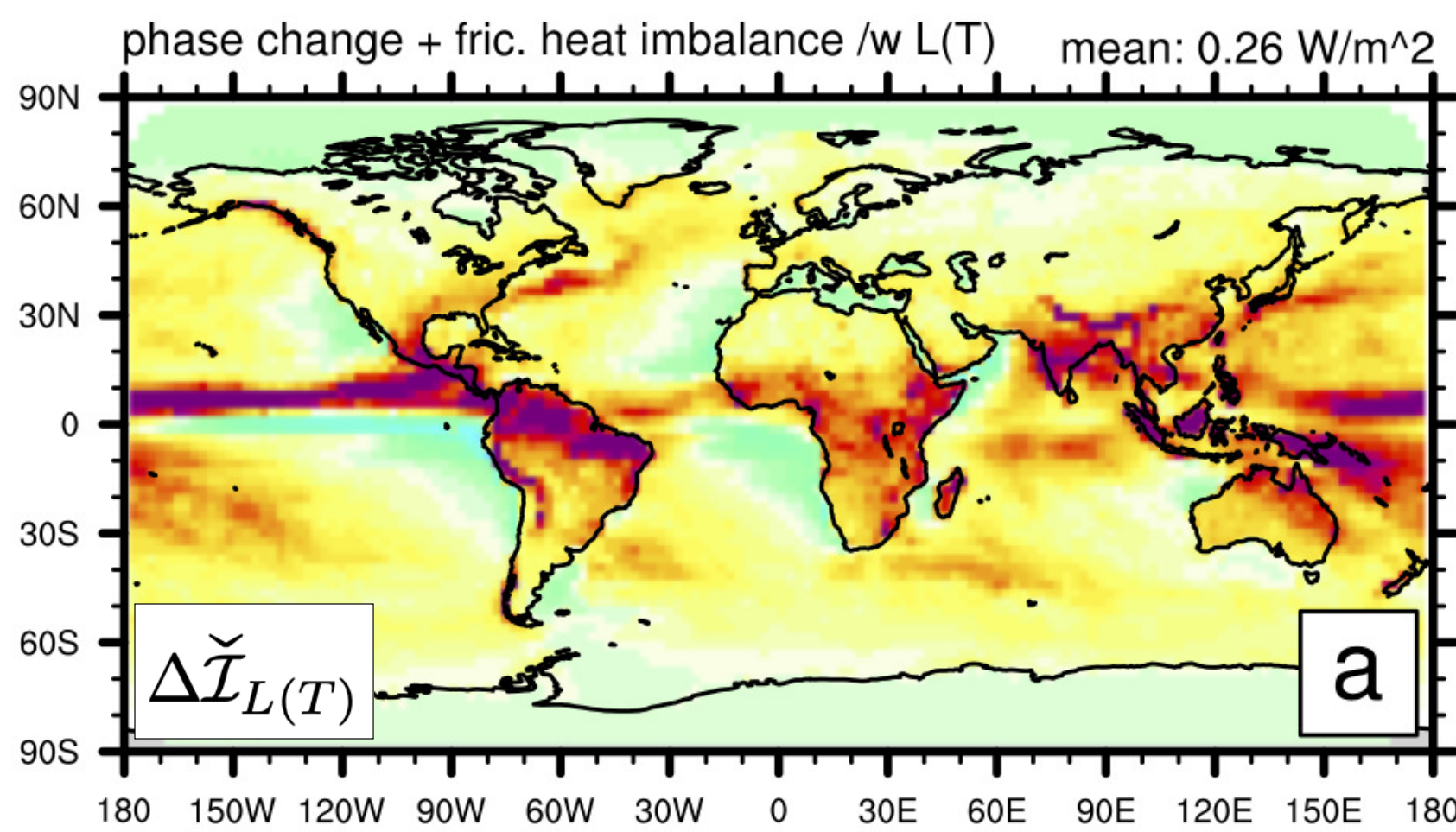


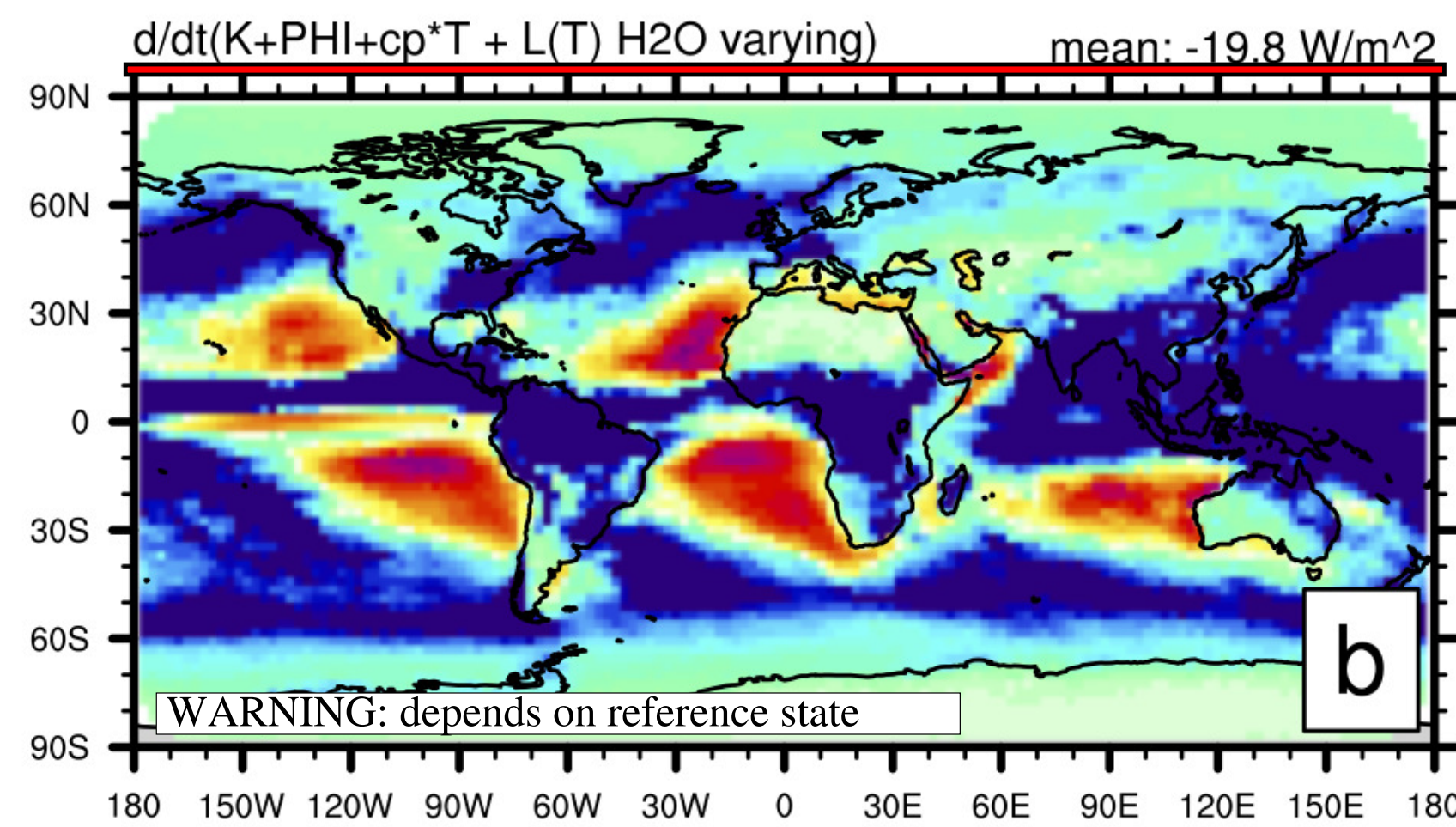
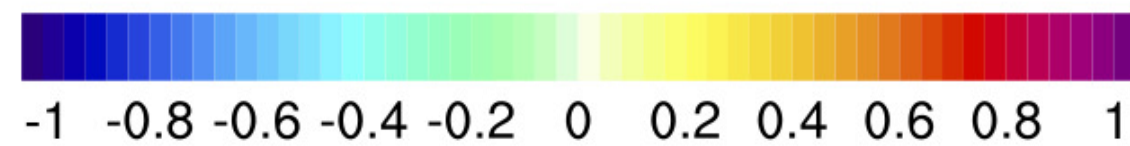
# Modified (consistent) total energy equation assuming variable latent heats

$$\frac{\partial}{\partial t} \int \bar{\rho}^{(d)} \left\{ \underbrace{\left(1 + \bar{m}^{(H_2O)}\right) \left(\bar{K} + \bar{\Phi}_s\right) + c_p^{(d)} T + \sum_{\ell \in \mathcal{L}_{H_2O}} \bar{m}^{(\ell)} c_p^{(\ell)} \left(\bar{T} - T_{00}\right) + \bar{m}^{(wv)} L_{s,00} + \bar{m}^{(liq)} L_{f,00}}_{\ell \in \mathcal{L}_{H_2O}} \right\} dz$$

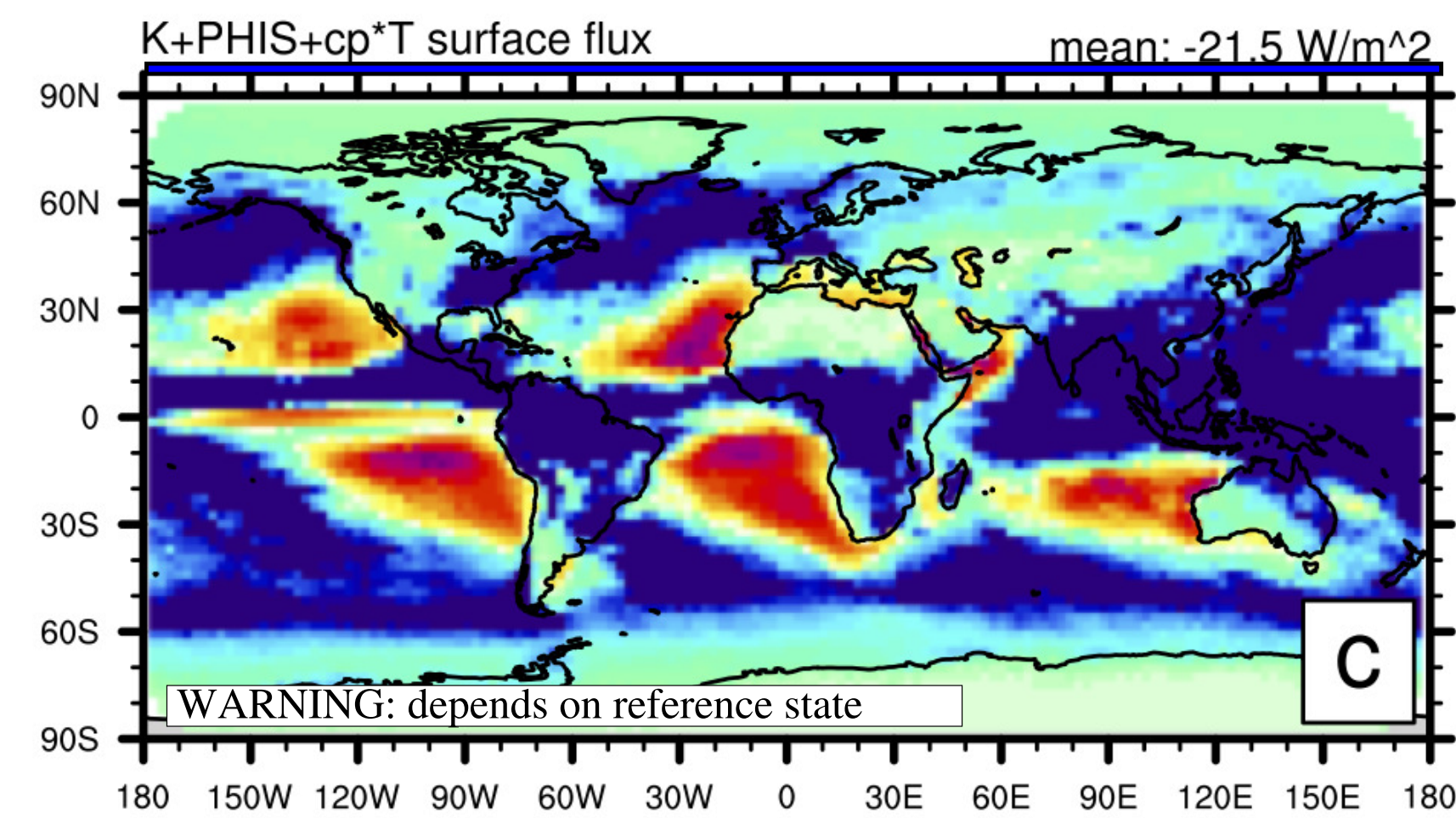
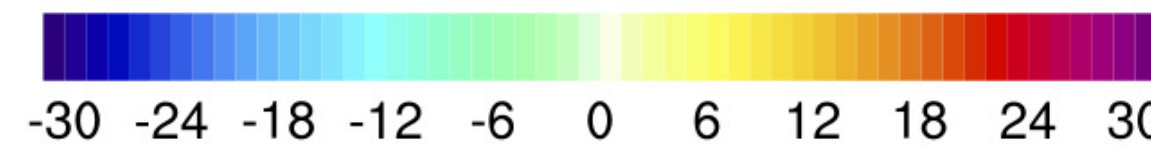
$$-\Delta \check{\mathcal{I}}_{L(T)} - \Delta \hat{\mathcal{I}}_{L(T)} = - \sum_{\ell \in \mathcal{L}_{H_2O}} \bar{F}_{net}^{(\ell)} \left[ \underbrace{c_p^{(\ell)} \left(\tilde{T}_s - T_{00}\right) + \tilde{K}_s}_{\ell \in \mathcal{L}_{H_2O}} \right] + \bar{F}_{net}^{(wv)} L_{s,00} + \bar{F}_{net}^{(liq)} L_{f,00} + \bar{F}_{net}^{(turb,rad)}$$



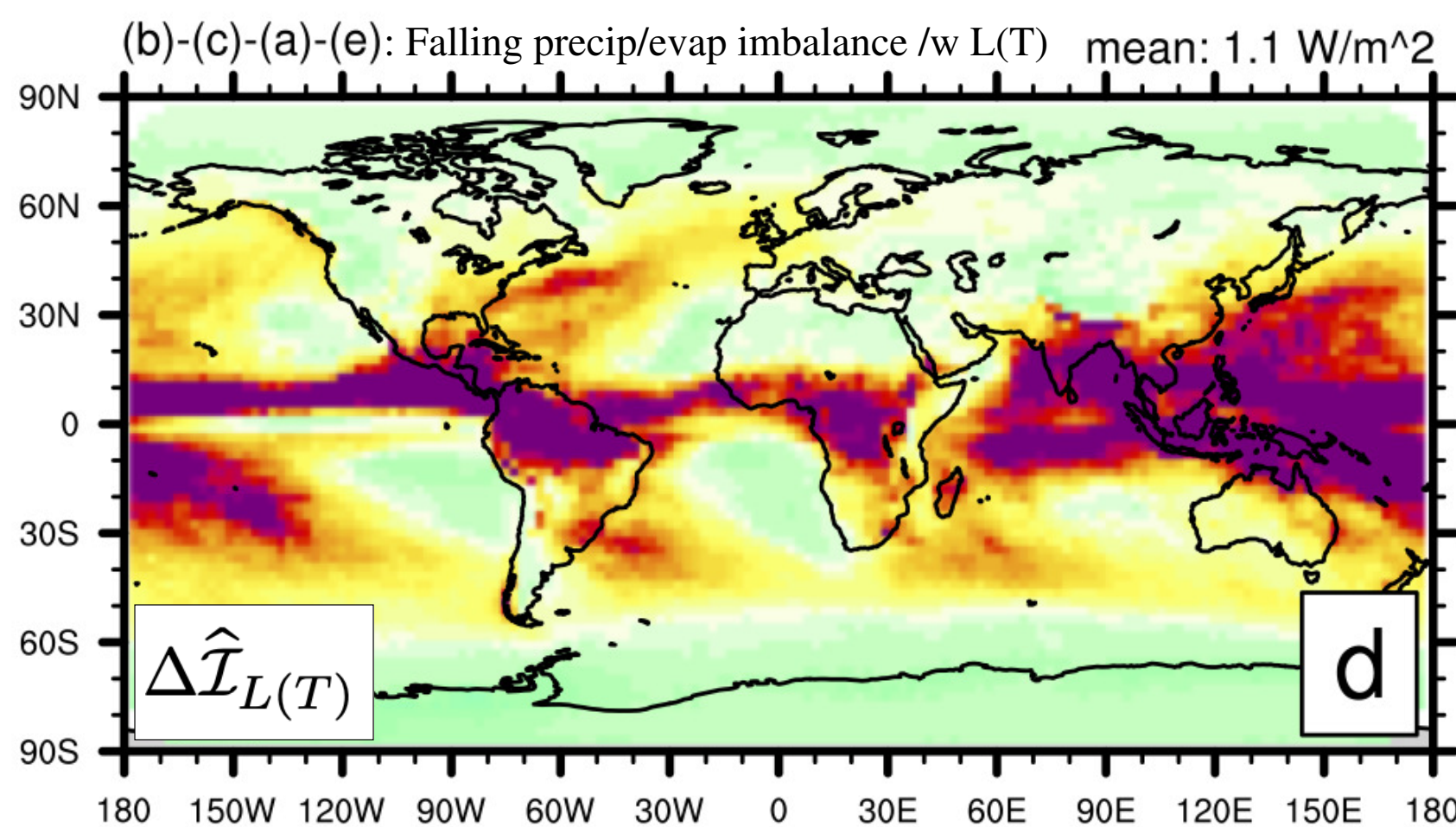
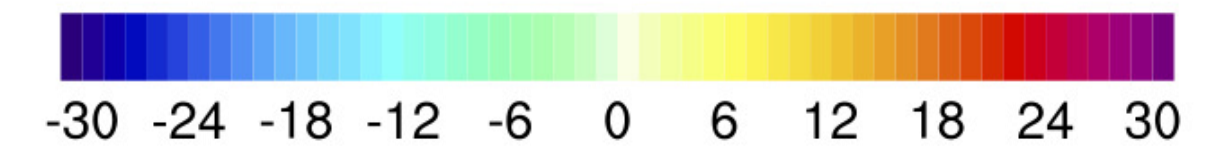
global min = -0.4839 global max= 4.794



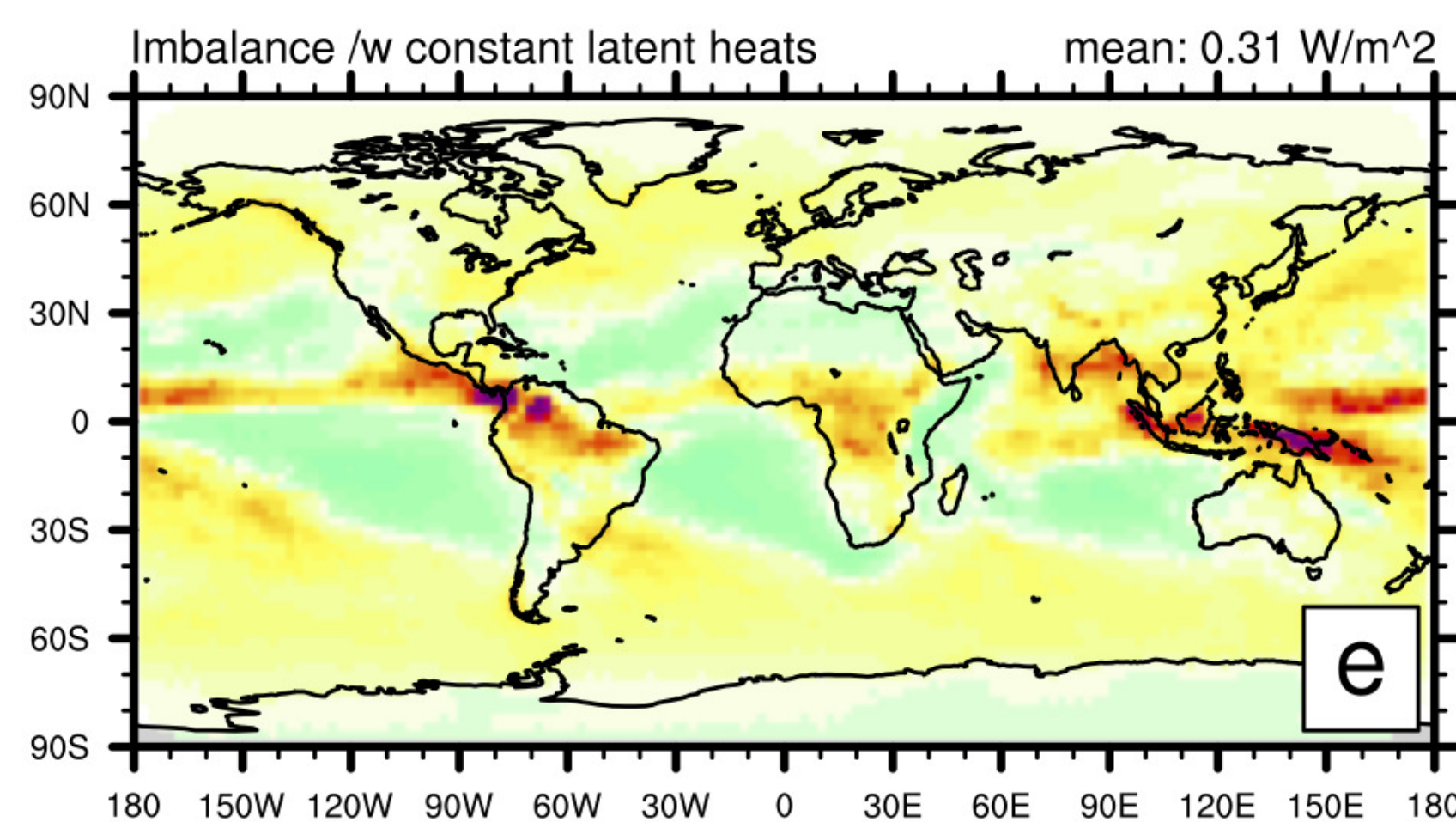
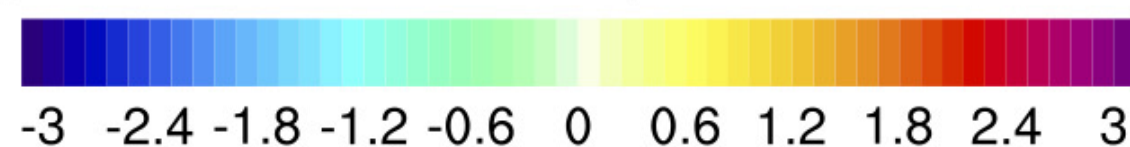
global min = -339.6 global max= 50.73



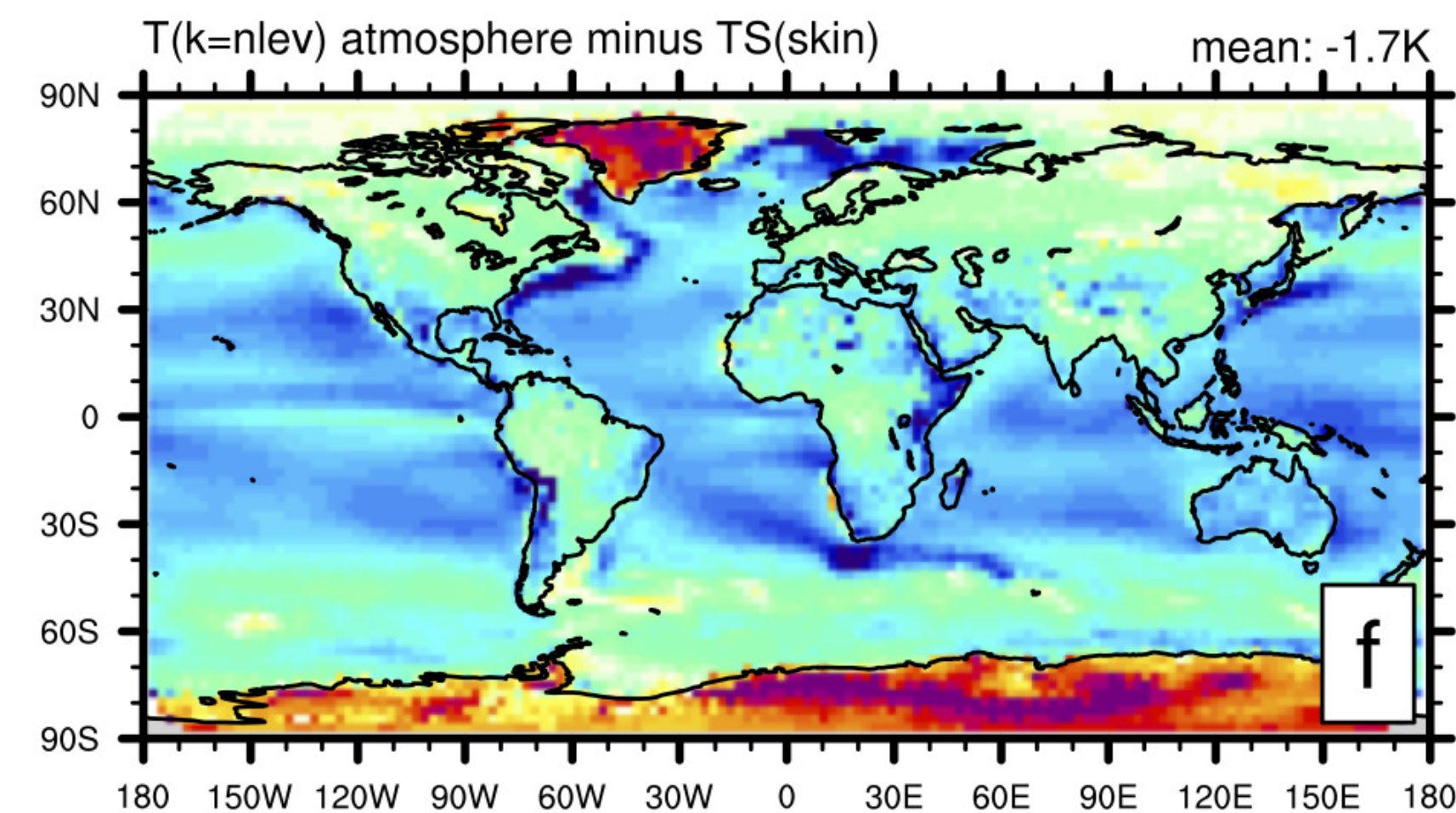
global min = -363.9 global max= 51.55



global min = -0.7336 global max= 15.23



global min = -0.5643 global max= 6.651



global min = -6.37 global max= 6.825

