Figure S1: Climatological (left) gravity wave drag and (right) latent heating averaged between 25S and 25N for selected runs. Behavior of UV nudging simulations is quantitatively similar to their UVT counterparts. Gravity wave drag is the sum of the output variables UTGWSPEC, BUTGWSPEC, and UTGWORO.
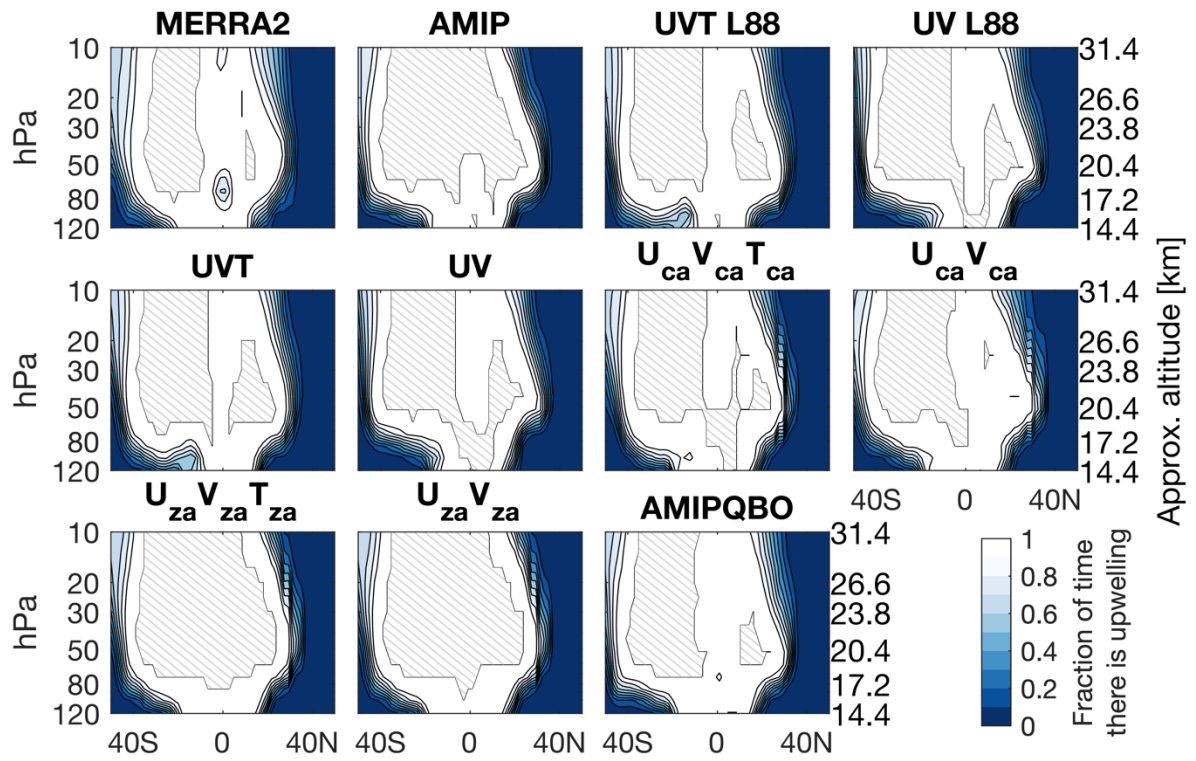
Figure S2: Frequency of upwelling based on the streamfunction definition of the residual circulation for each model simulation for December-January-February only. Hatching indicates there is upwelling 100% of the time.
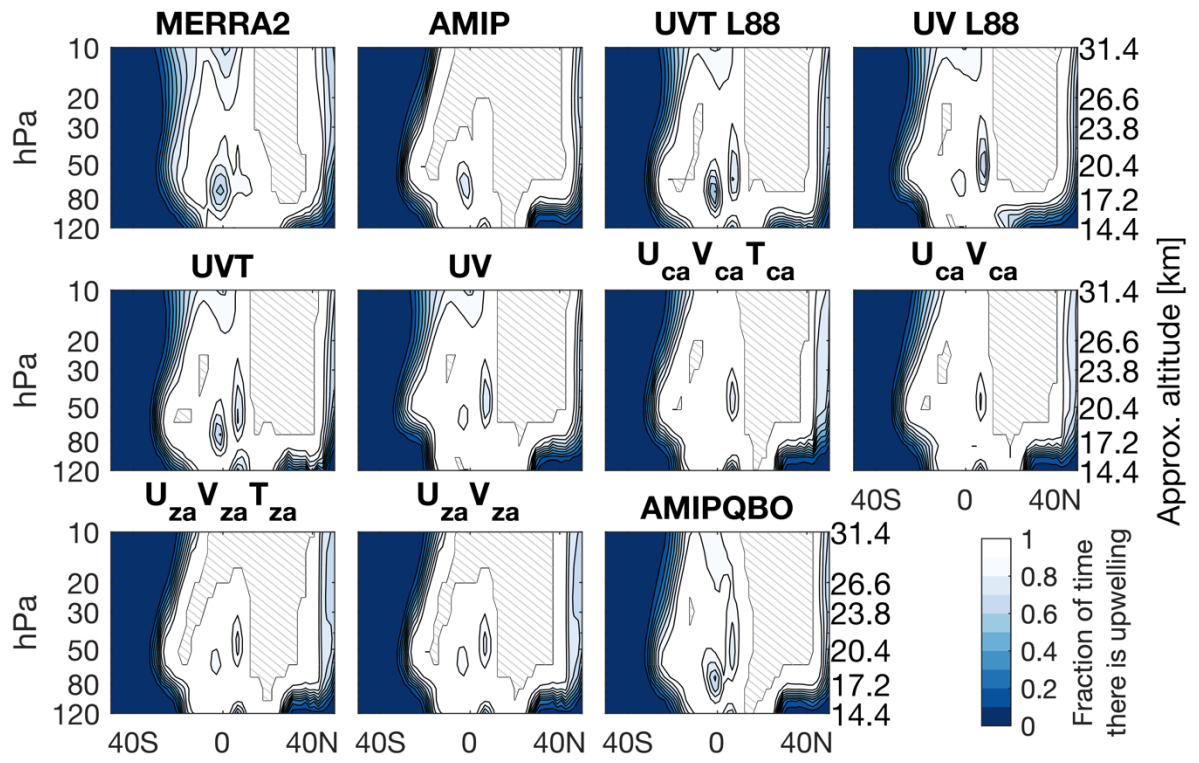
Figure S3: As in Fig. S2, but for June-July-August only.