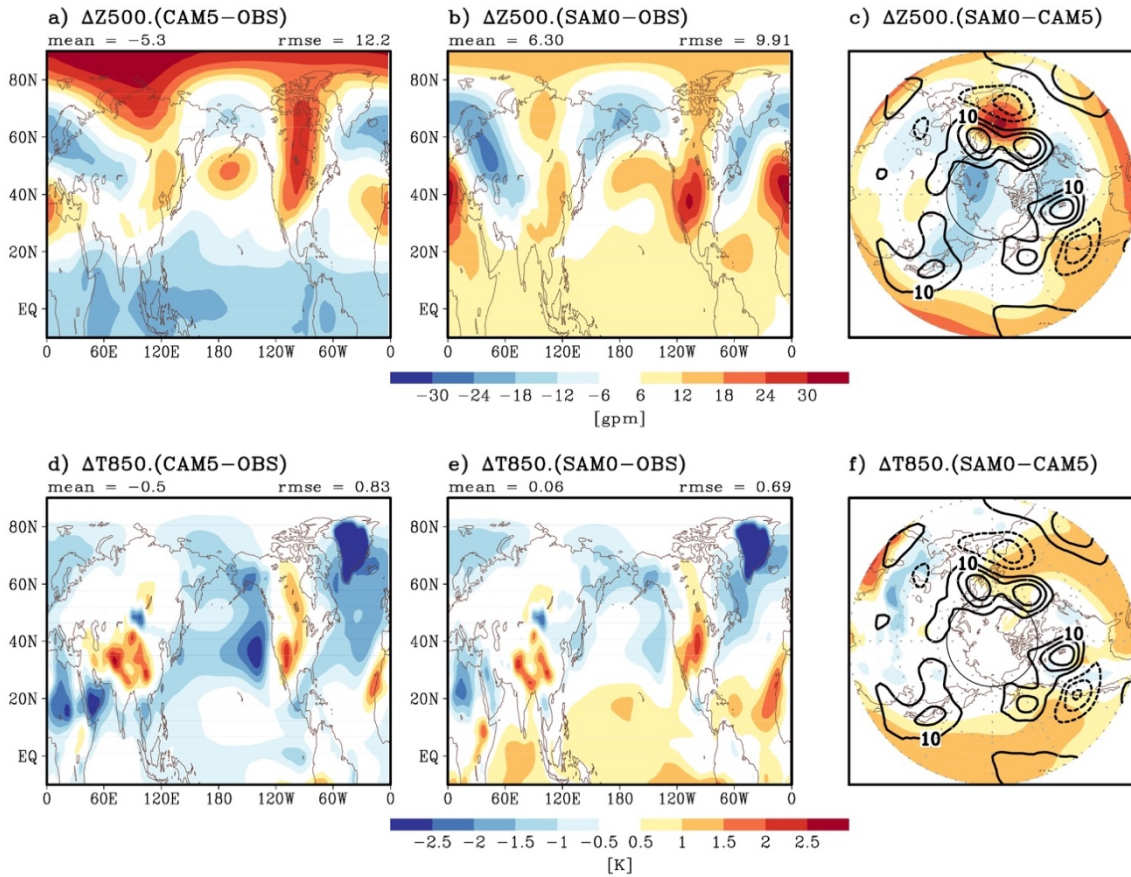
Supplementary Information

Supplementary Figure 1. Differences of annual-mean (upper) 500 hPa geopotential height (Z500) and (lower) 850 hPa air temperature (T850) between (left) CAM5 and ERA-interim reanalysis observation, (center) SAM0 and observation, and (right) SAM0 and CAM5. The thick black contours in (c) and (f) denote the difference of storm track activity at 300 hPa defined as the transient meridional velocity variance (v'v') and thin black contours denote the Arctic circle (65° N).