

Chapter 2 Figures for Public Review

CHAPTER 2

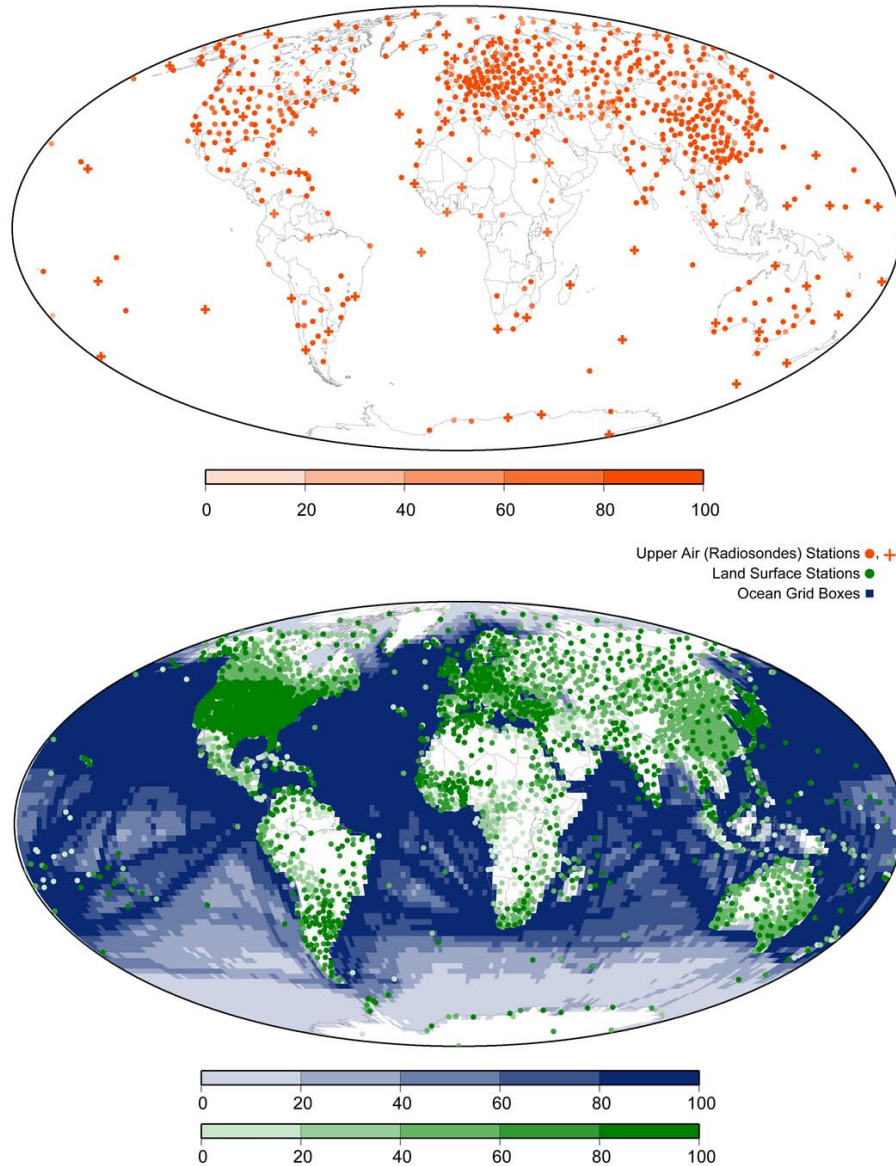


Figure 2.1 Top: Location of radiosonde stations used in the HadAT upper air dataset with those also in the LKS as crosses. Bottom: Distribution of land stations (green) and SST observations (blue) reporting temperatures used in the surface temperature datasets over the period 1979-2004. Darker colors represent locations for which data were reported with greater frequency. See chapter 3 for definitions of datasets.

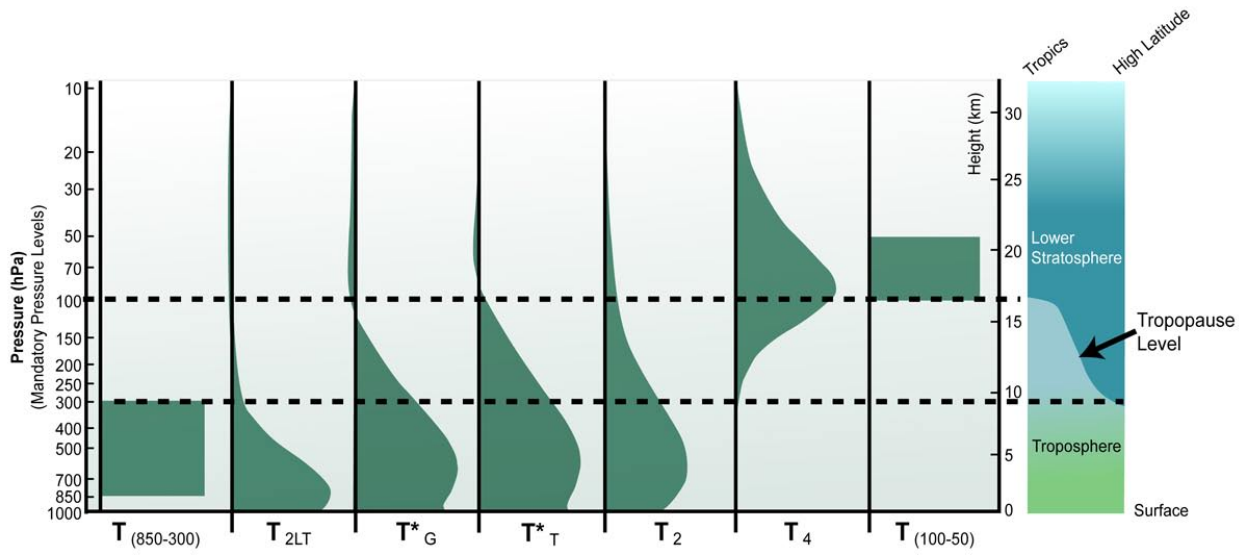


Figure 2.2 Terminology and vertical profiles for the temperature products referred to in this report. Radiosonde-based layer temperatures ($T_{850-300}$, T_{100-50}) are height-weighted averages of the temperature in those layers. Satellite-based temperatures (T_{2LT} , T_2 , and T_4) are mass-weighted averages with varying influence in the vertical as depicted by the curved profiles, i.e., the larger the value at a specific level, the more that level contributes to the overall satellite temperature average. The subscript simply indicates the layer where 90% of the information for the satellite average originates.

*Notes: (1) because radiosondes measure the temperature at discrete (mandatory) levels, their information may be used to create a temperature value that mimics a satellite temperature (Text Box 2.1), (2) layer temperatures vary from equator to pole so the pressure and altitude relationship here is based on the atmospheric structure over the conterminous U.S., (3) about 10% (5%) of the value of T_{2LT} (T_2) is determined by the surface character and temperature, (4) T^*_T and T^*_G are simple retrievals, being linear combinations of 2 channels, T_2 and T_4*