

Chapter 4 Figures for Public Review

CHAPTER 4

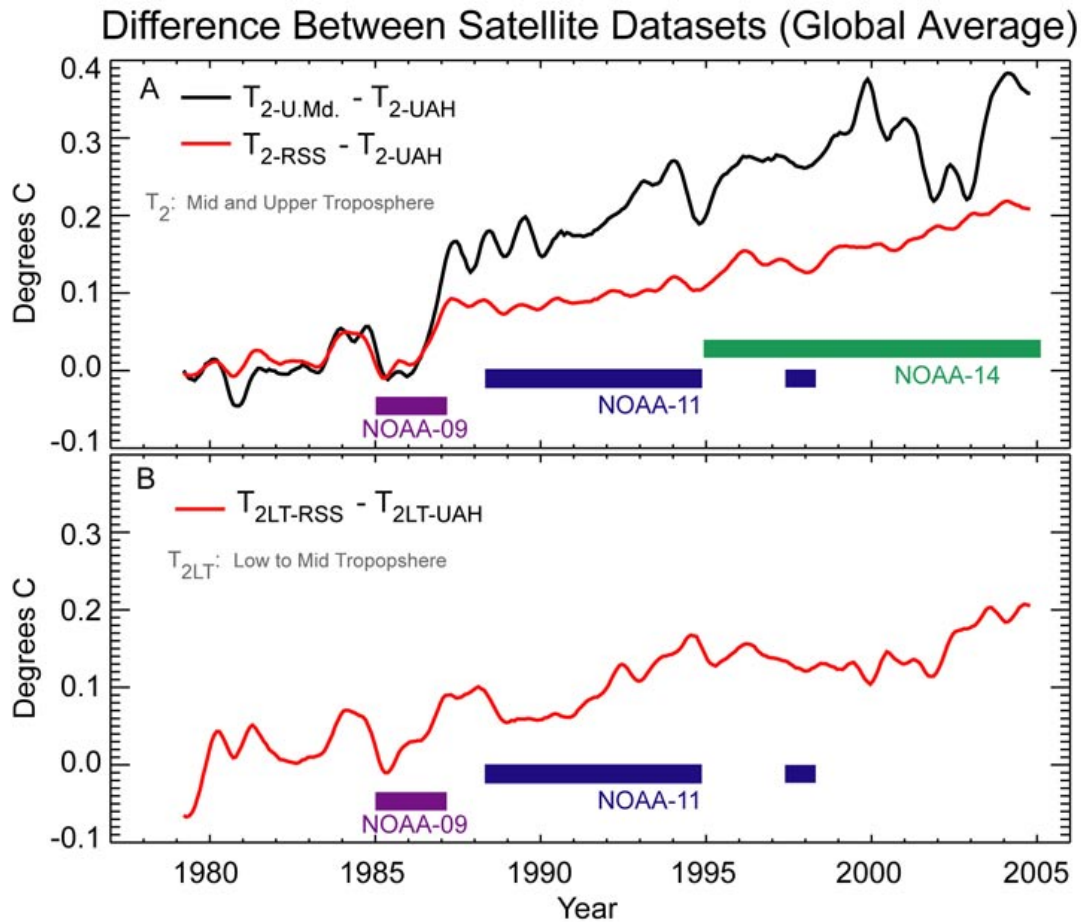
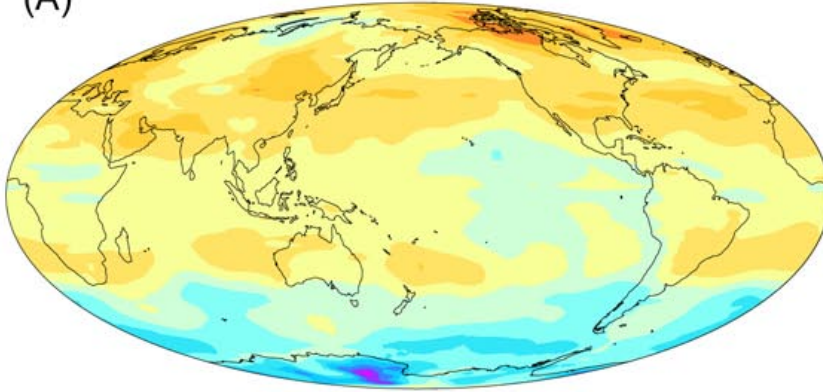


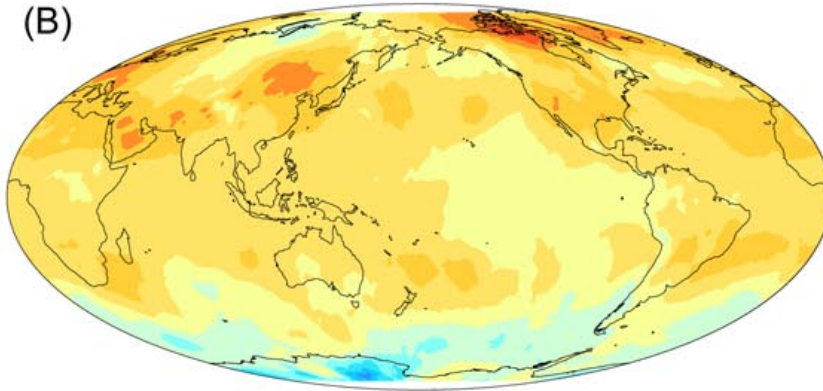
Figure 4.1 (a) Time series of the difference between global averages of satellite-derived T_2 datasets. Both the RSS and UMD datasets show a step-like feature relative to the UAH dataset during the lifetime of NOAA-09. The difference between the RSS and the UAH datasets shows a slow drift during the NOAA-11 and NOAA-14 lifetimes. Both these satellites drifted more than 4 hours in observations time. **(b)** Time series difference between global averages of satellite derived $T_{2\text{LT}}$ datasets. A slow drift is apparent during the lifetime of NOAA-11, but the analysis during the NOAA-14 lifetime is complicated because the $T_{2\text{LT}}$ -RSS dataset does not include data from the AMSU instruments on NOAA-15 and NOAA-16, while the $T_{2\text{LT}}$ -UAH dataset does. All time series have been smoothed using a Gaussian filter with width = 7 months.

Mid to Upper Troposphere Temperature Trend
1979-2004 (°C/Decade)

(A)



(B)



(C)

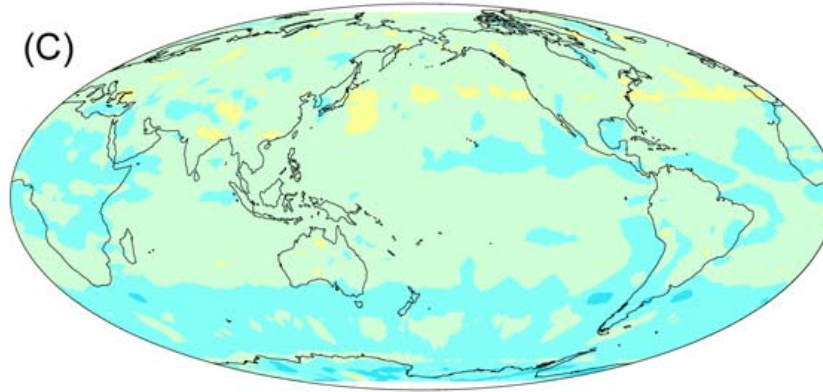


Figure 4.2 Global maps of trends from 1979-2004 for (a) T_2 -UAH and (b) T_2 -RSS. Except for an overall difference between the two results, the spatial patterns are very similar. A map of the difference T_2 -UAH - T_2 -RSS between trends for the two products shown in (c) reveals more subtle differences in the trend.

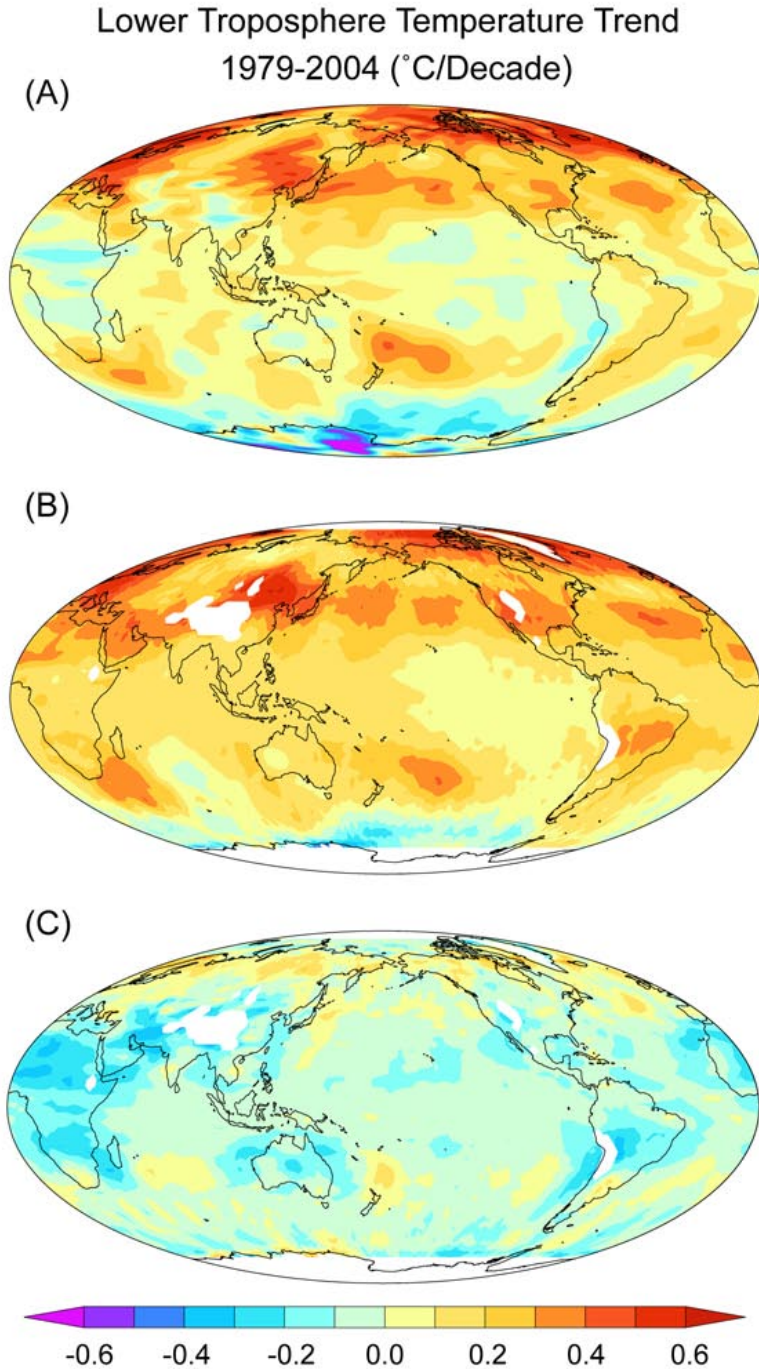


Figure 4.3 Global maps of trends from 1979-2004 for (a) T_{2LT} -UAH and (b) T_{2LT} -RSS. Except for an overall difference between the two results, the spatial patterns are similar. A map of the difference T_{2LT} -UAH - T_{2LT} -RSS between trends for the two products shown in (c) shows that the largest differences are over tropical and subtropical land areas. Data from land areas with elevation higher than 2000m are excluded from the T_{2LT} -RSS dataset and shown in white.

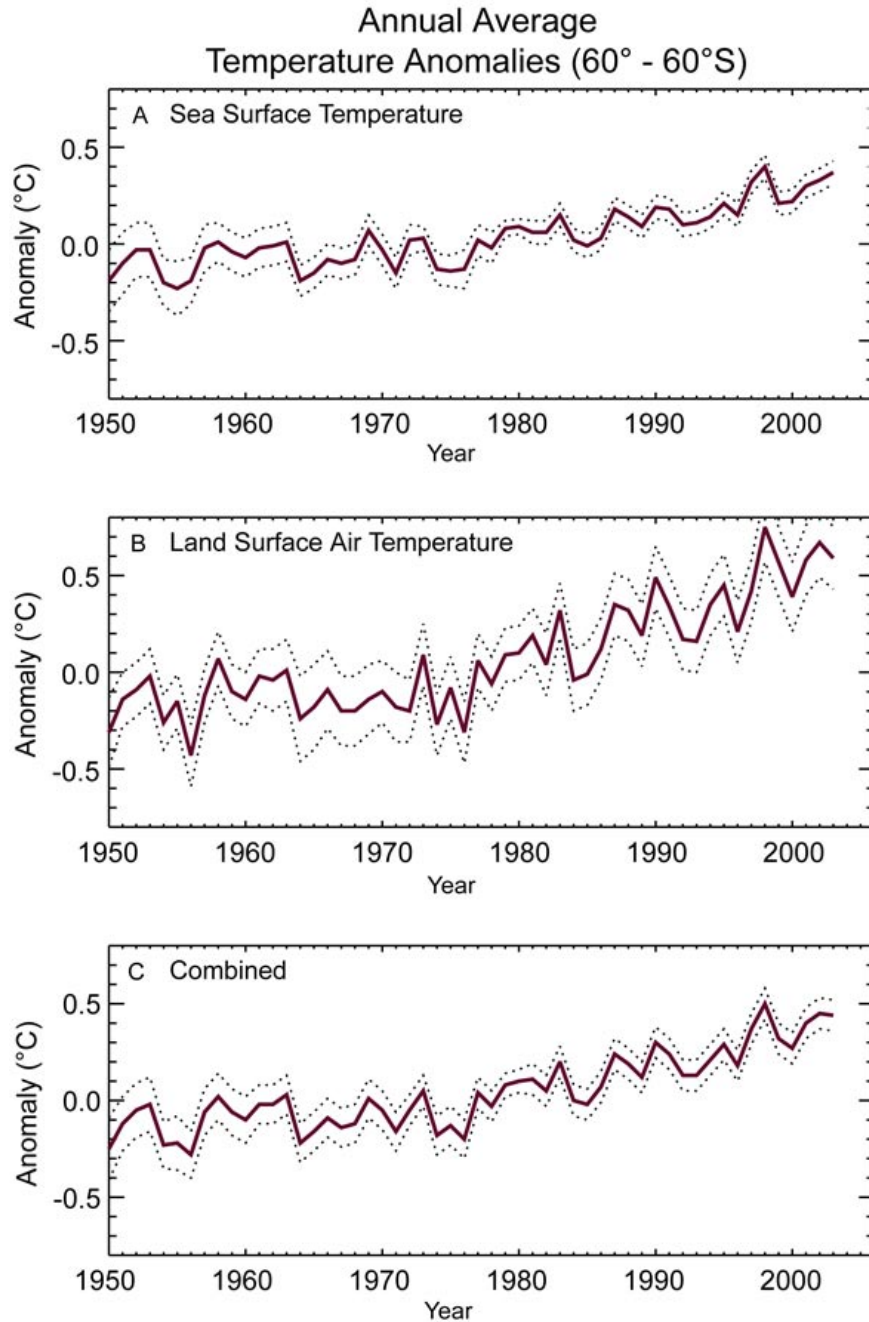


Figure 4.4. SST, Land Surface Air Temperature, and the Combined Temperature Data Record anomaly averaged annually and between 60°S and 60°N (purple), with its estimated 95% confidence intervals (dashed). Data are from the NOAA GHCN-ERSST dataset (Smith and Reynolds 2005).