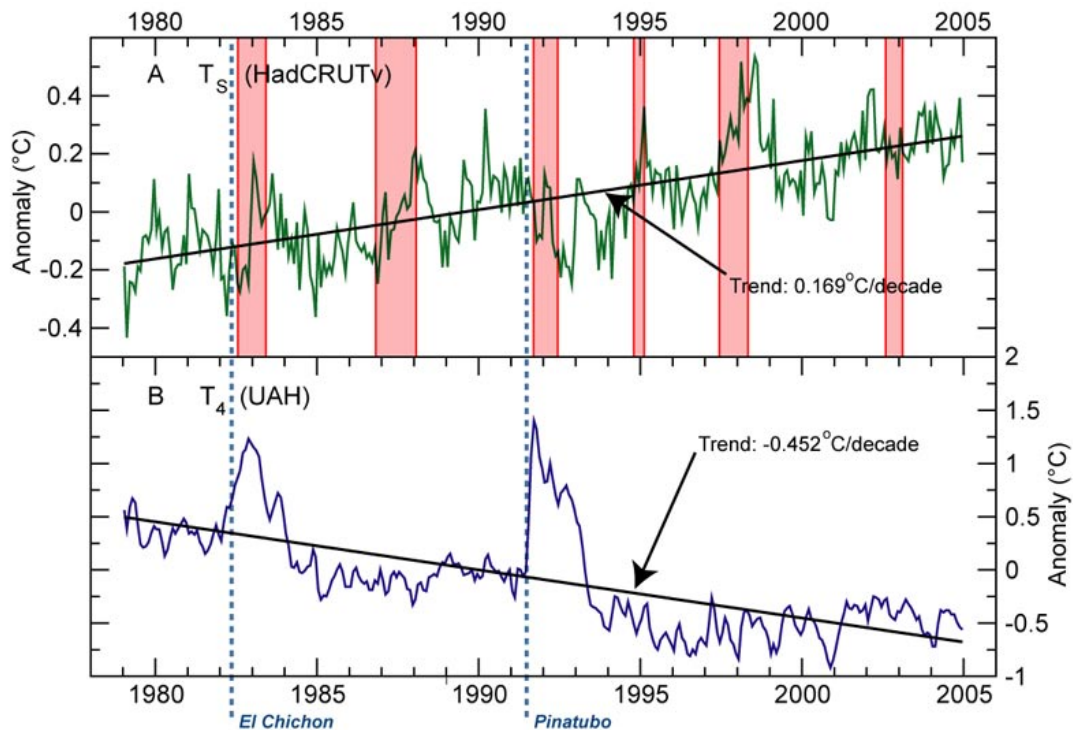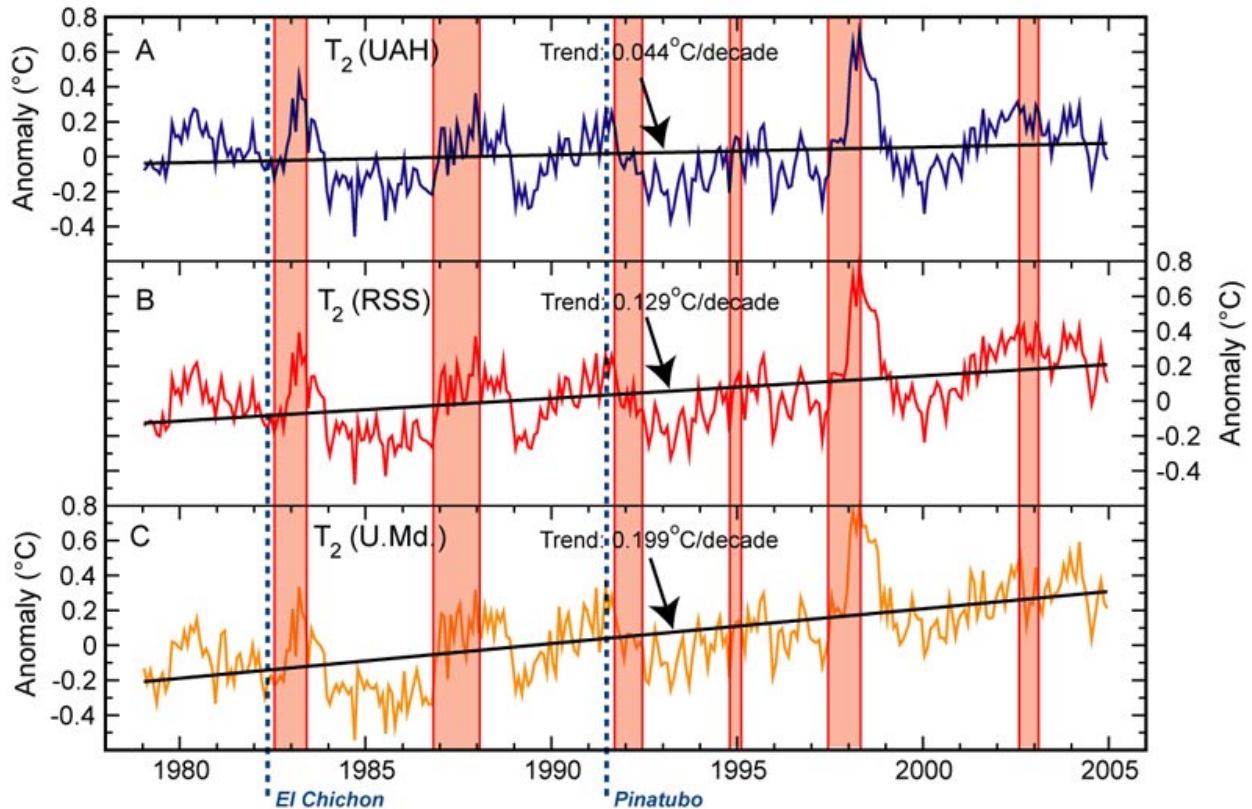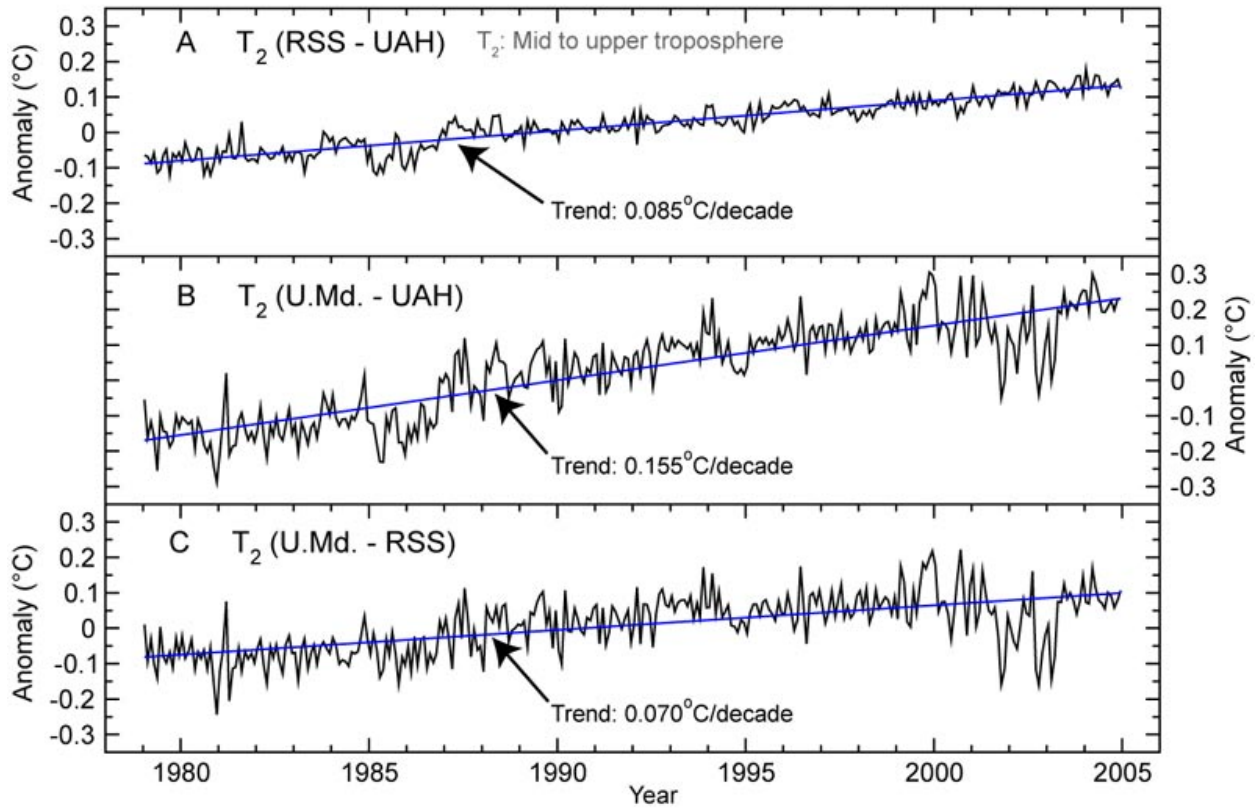# Appendix Figures
for
Public Review

APPENDIX: STATISTICAL
# ISSUES REGARDING TREND

Appendix Figure 1: Examples of temperature time series with best-fit (least squares) linear trends: A, global-mean surface temperature from the UKMO Hadley Centre/Climatic Research Unit data set (HadCRUTv); and B, MSU channel 4 data (T_4) for the lower stratosphere from the University of Alabama at Huntsville (UAH). Note the much larger temperature scale on the lower panel. Temperature changes are expressed as anomalies relative to the 1979 to 1999 mean (252 months). Dates for the eruptions of El Chichon and Pinatubo are shown by vertical lines. El Niños are shown by the shaded areas. These were defined by low-pass filtering of the Southern Oscillation Index (SOI) time series with an 11-month, 9-term Gaussian filter and using a threshold index value of −0.7 to define an event.

Appendix Figure 2: Three estimates of temperature changes for MSU channel 2 (T_2), expressed as anomalies relative to the 1979 to 1999 mean. Data are from: A, the University of Alabama at Huntsville (UAH); B, Remote Sensing Systems (RSS); and C, the University of Maryland (U.Md.) The estimates employ the same 'raw' satellite data, but make different choices for the adjustments required to merge the various satellite records and to correct for instrument biases. The statistical uncertainty is virtually the same for all three series. Differences between the series give some idea of the magnitude of structural uncertainties. Volcano eruption and El Niño information are as in Figure 1.

Appendix Figure 3: Difference series for the MSU T_2 series shown in Figure 2. Variability about the trend line is least for the UAH minus RSS series indicating closer correspondence between these two series than between U.Md. and either UAH or RSS.
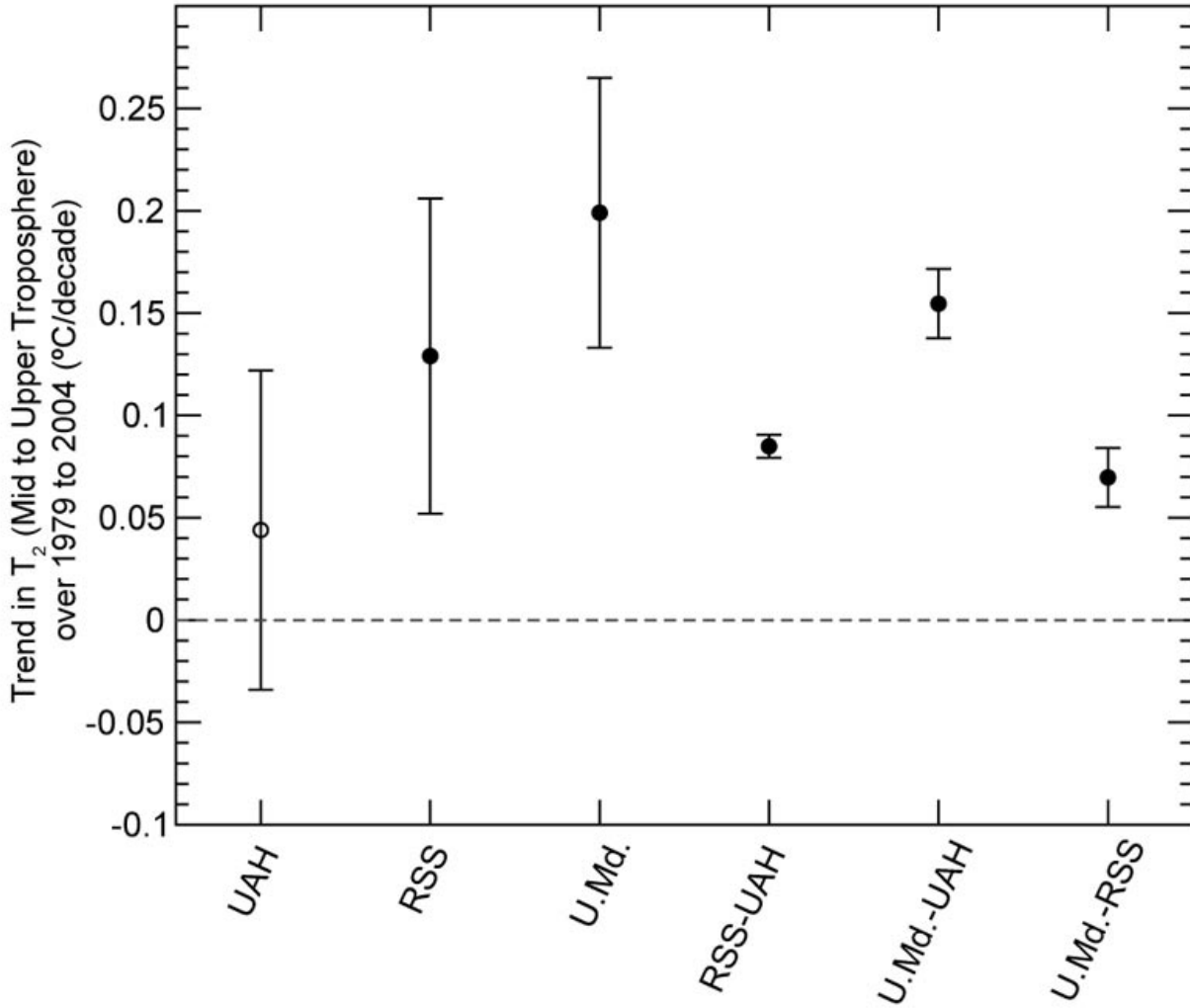
Appendix Figure 4: 90% confidence intervals for the three MSU T_2 series shown in Figure 2, and for the three difference series shown in Figure 3.
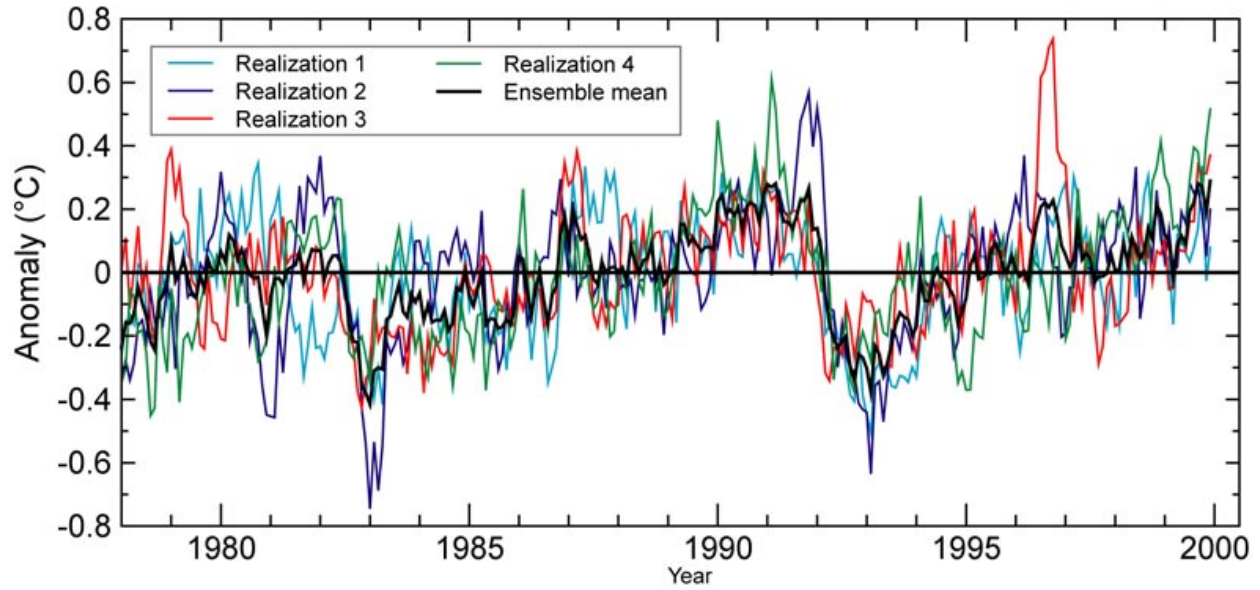
Appendix Figure 5: Four separate realizations and their ensemble average for a simulation using realistic 20th Century forcing (both natural and anthropogenic) carried out with the xxx AOGCM.
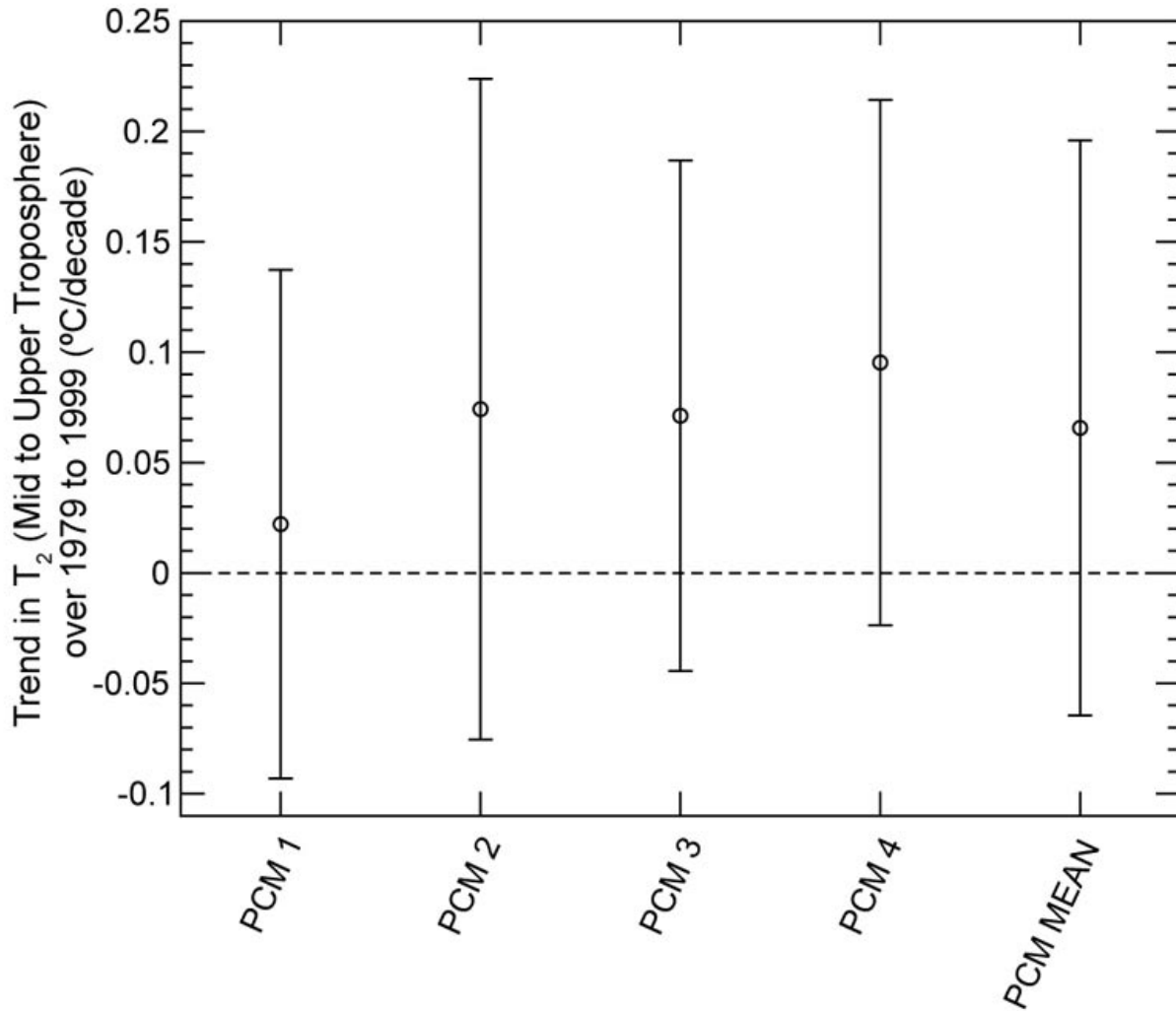
Appendix Figure 6: 90% confidence intervals for individual model realizations of MSU T_2 temperature changes, compared with the 90% confidence interval for the ensemble (n=4) average.