EAS372　　　Assignment 1　　　Due: Tues 1 Feb., 2011

Please submit a tidy, organized report covering the exercise below. Report should be single-sided, double spaced and the page limit is **two**, not counting figures.

Record a two week time series (two points per day) of the Edmonton (Stony Plain) 1000-500 hPa thickness. Data can be obtained from the soundings (see course URLs) or (less accurately and more laboriously) by interpolating between contours on the CMC 500hPa analyses at 00Z and 12Z.

Let any given point in this series be labelled ΔZ_i ($i = 1...28$). Compute the mean value $\overline{\Delta Z}$ of your thickness time series, and form the series

$$q_i = \frac{1}{2} \left(\Delta Z_i - \overline{\Delta Z} \right) \tag{1}$$

(the factor of two corresponds to the relationship between changes in thickness and changes in mean layer temperature). Graph your time series q_i. Alongside, but with an arbitrary offset on the q-axis, plot the time series of the following (crudely-computed) layer mean temperature,

$$T_i = \frac{1}{9} \left[2\, T_i^{(850)} + 3\, T_i^{(700)} + 4\, T_i^{(500)} \right] \ . \tag{2}$$