Atmospheric CO₂ Excel exercise

For this assignment we will be examining the atmospheric carbon dioxide levels as measured at the Mauna Loa observatory. From this data you will develop three simple models designed to predict future atmospheric carbon dioxide levels. You will also be asked to comment on the validity of each of the models.

Go to the following website:

- Select NOAA CO₂ Data for Mauna Loa Observatory (excel spreadsheet)
- Click on the NOAA_ESRI CO2 Dataset tab
- Create a scatter plot chart (graph) using decimal dates from 1960.042 (Jan 1960) to most recent month available (Most likely July 2014)
- Properly label your axis
- Set vertical scale to 300 ppm – 425 ppm
- Set horizontal scale to 1960.000 – 2015.000
- Set gridlines to every 25 ppm
- Add trendline with R² value and equation for the line.
- Using equation for line, determine the model’s prediction for atmospheric CO₂ levels in the following years: 2015, 2020, 2040, 2060, 2080 & 2100. Label the column for these values as CO₂ levels for Model 1 (ppm). You must use another page in the spreadsheet to determine these values. I do not want them calculated by hand and then inserted into the spreadsheet.

Question 1) Do you think these values over or under estimate future CO₂ levels? Why?

- For Model 2, follow the same technique for model one, but limit your time to Jan 1990 through Jan 2003. List the values predicted under a column labeled CO₂ Levels for Model 2 (ppm).

- For Model 3, follow the same technique, but limit your time to Jan 2003 through Jan 2014. List the values predicted under a column labeled CO₂ levels for Model 3 (ppm).

Question 2) Are either model 2 or 3 more valid than model 1? Why?

Question 3) Why do you think model 3 is more drastic than model 2? What circumstances may have caused this change?

- Send completed spreadsheet with these three questions completed to Prof. Weeden by Oct 26th.