

### Observations

1. The temperature doesn't go much more than 2 degrees above, or about 8 degrees below today's average.
2. The temperature goes through regular fluctuations about every hundred thousand years or so.
3. We're just about due for another ice age.

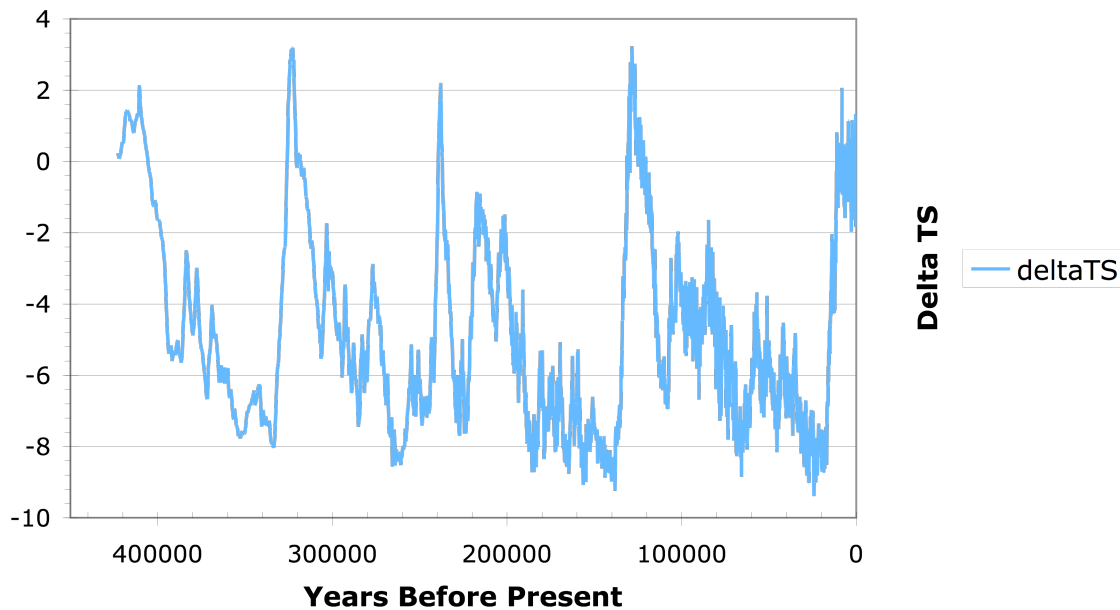
### Questions

1. What could change the regular cycles?
2. What will happen if we do have another ice age soon?
3. How accurate is the data?

### Speculations

1. The natural cycle is caused by differences in the earth's orbit around the sun.
2. Global warming could avert the next ice age.
3. Global warming could trigger the next ice age.

## Temperature Differences from Today's Average



### Observations

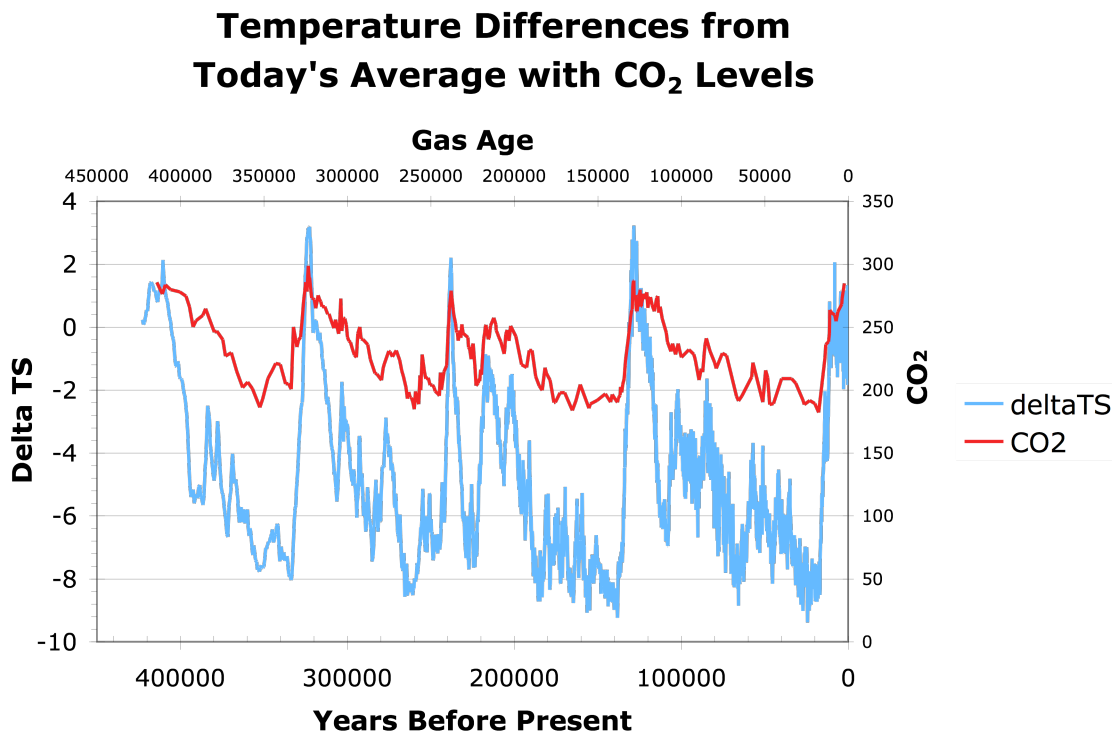
1. There is a definite and striking correlation between CO<sub>2</sub> levels and the temperature fluctuations.
2. The CO<sub>2</sub> levels are about as high now as they have ever gotten.
3. After CO<sub>2</sub> levels got to this point before, there has always been a sharp decrease in temperature.

### Questions

1. Is the correlation between CO<sub>2</sub> levels and temperature statistically significant?
2. Do higher CO<sub>2</sub> levels cause higher temperatures, or could it be the other way around?
3. Are we in for another cold spell?

### Speculations

1. This graph indicates that we ARE in for another cold period.
2. Increases in CO<sub>2</sub> levels cause increases in temperature.
3. If we continue pumping out CO<sub>2</sub>, we can offset the next cold spell.



## Observations

1. In addition to there being a close correlation between CO<sub>2</sub> levels and temperature, there seems to be an even closer correlation with methane levels.
2. Methane concentrations, though smaller by an order of magnitude, seem to make more of an impact on temperatures.
3. CO<sub>2</sub> seems to be responsible for the overall trends in temperature, whereas methane seems to have a more immediate effect.

## Questions

1. Can experiments be done to determine the causal relationship between different greenhouse gases and the temperature changes?
2. Why is there only forty thousand years of data for methane and over four hundred thousand for CO<sub>2</sub>?
3. Should we be focusing on other things besides CO<sub>2</sub>?

## Speculations

**Methane concentrations vs. Age**

