Atmospheric Sciences 111 Homework 5 Due Tuesday July 27

Sea Level Rise

1) Explain at least two ways in which global warming can create sea level rise. How do scientists measure these contributions? (Don't worry about the technical details of measurement methods, just a brief non-technical explanation is fine.) (4)

2) In the 21st Century, global average sea level is expected to rise anywhere from 0.5 m to 2 m (the latter being an unlikely but possible outcome). What locations will be most vulnerable to such sea level rise? What sorts of social, economic, and political effects do you think this will have? (4)

Ocean Circulation & Ecology

3) What is the thermohaline circulation (THC)? Why is it possible that this circulation will weaken due to global warming? Based on the information provided in class and in the book, what impact do you think a weakening of the THC could have on European climate? (4)

4) How do CO_2 emissions harm coral reefs and other oceanic ecosystems? (4)

Tropical Cyclones

5) Why might one expect that tropical cyclones could increase in frequency and/or intensity due to global warming? (2)

6) Name two difficulties scientists have in finding long-term changes in tropical cyclone frequency or intensity in the 20th Century. (3)

7) What do models predict about tropical cyclone changes in the 21st Century? (2)

Discussion Question

8) Please write down at least one question from **this week's** material that you would like to discuss on Friday. This may be on a topic you don't feel you understand well enough, or it may be a topic you found interesting and would like to discuss more. (2)