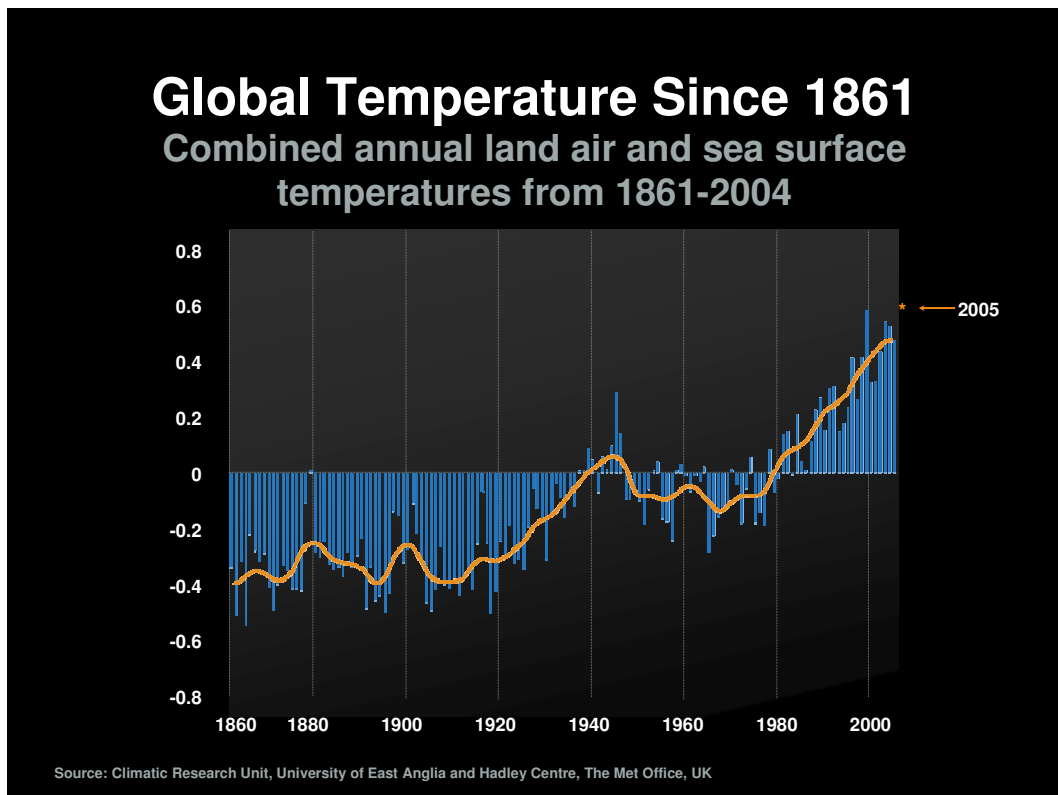


Question:

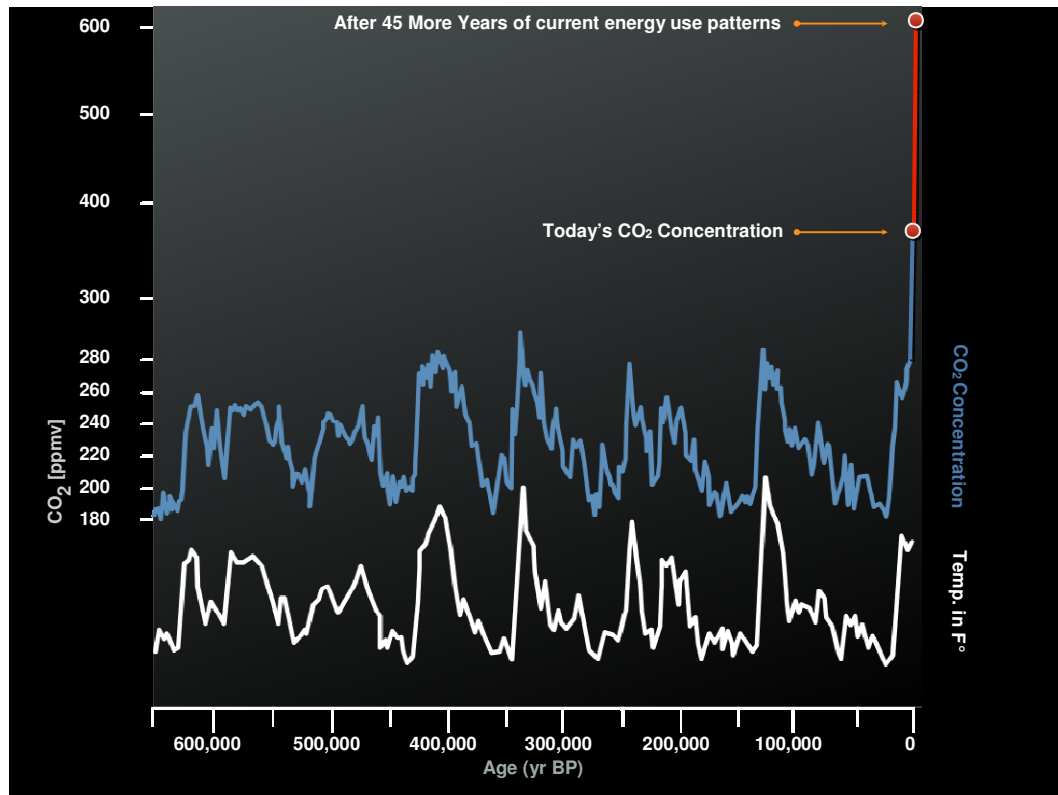
How do we know that global climate change is real and induced by humans?

Answer:

1. We've long known the following basic scientific facts:
 - a. The upper atmosphere traps some, but not all of the Sun's infrared light/heat to keep the Earth warm enough to support life.
 - b. The thicker the atmosphere, the more light/heat that layer traps.
 - c. Combustion of fossil fuels releases greenhouse gases into the atmosphere, thickening it in the process.
2. The following graph of actual temperature data begins at about the same time as did the Industrial Revolution—when rates of fossil-fuel combustion started growing exponentially.



3. Snow and ice form in identifiable layers over time, that can be read somewhat like the rings in a cross-section of tree trunk. Science can analyze the air bubbles embedded in core-drilled samples of snow and ice, to determine the temperatures and concentrations of carbon dioxide (CO₂)—the most prevalent greenhouse gas—back 650,000 years before the present (BP). This next graph shows that those data had relatively constant fluctuations—until the advent of the Industrial Revolution, when they began to climb sharply upward.



(Graphs for other combustion-related emissions, including nitrous oxides NO_x), sulfurous oxides (SO_x) and another greenhouse gas, methane (CH₄), going back 600-1,000 years, have similar curves.)

4. The approximately 2,000 scientists that make up the Intergovernmental Panel on Climate Change (<http://www.ipcc.ch/>) have spent years analyzing these and other data, and concluded that connection between global climate change and human activity is “unequivocal.”