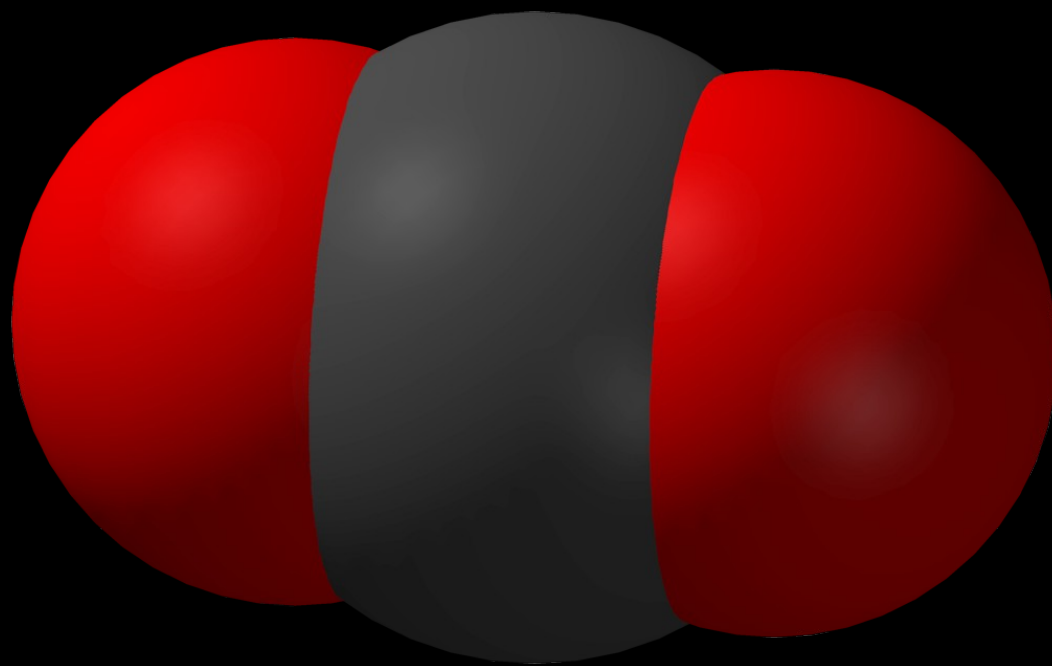
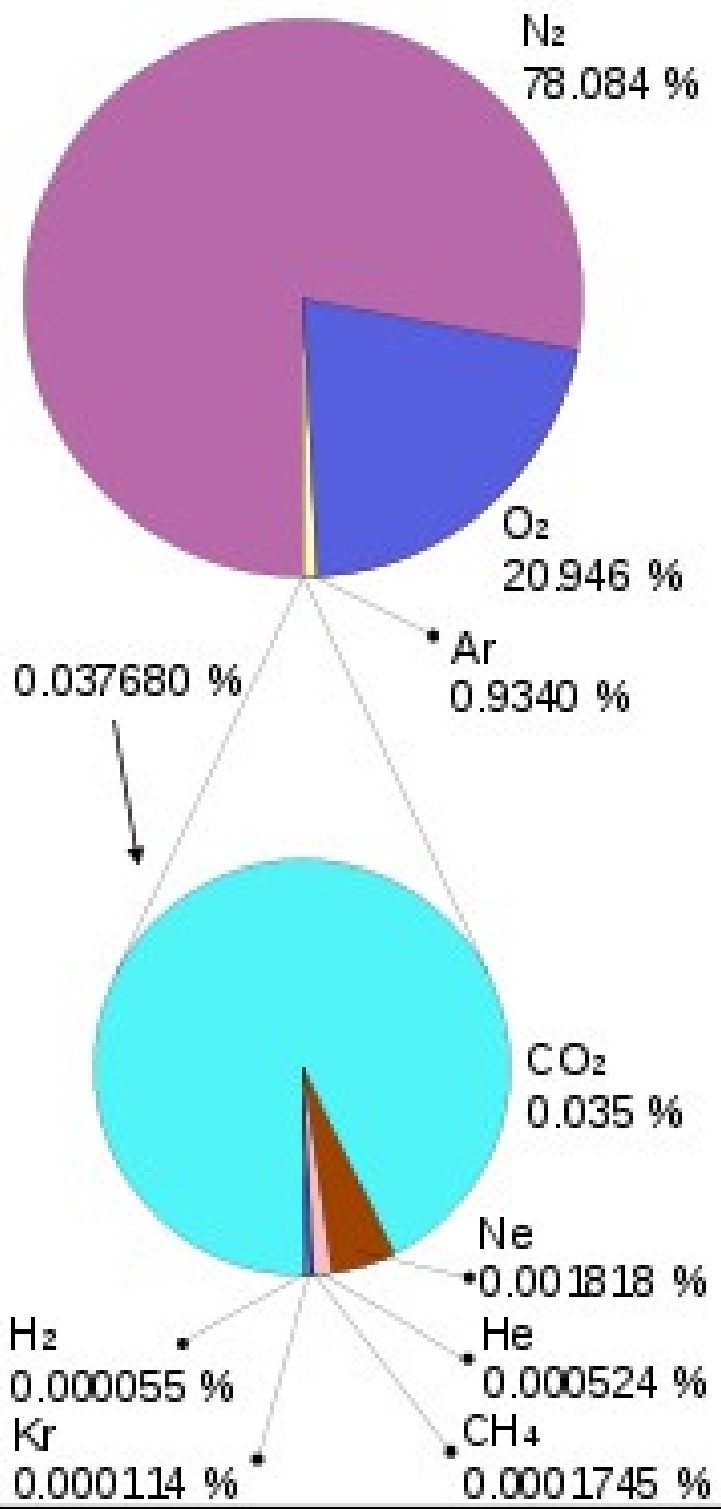


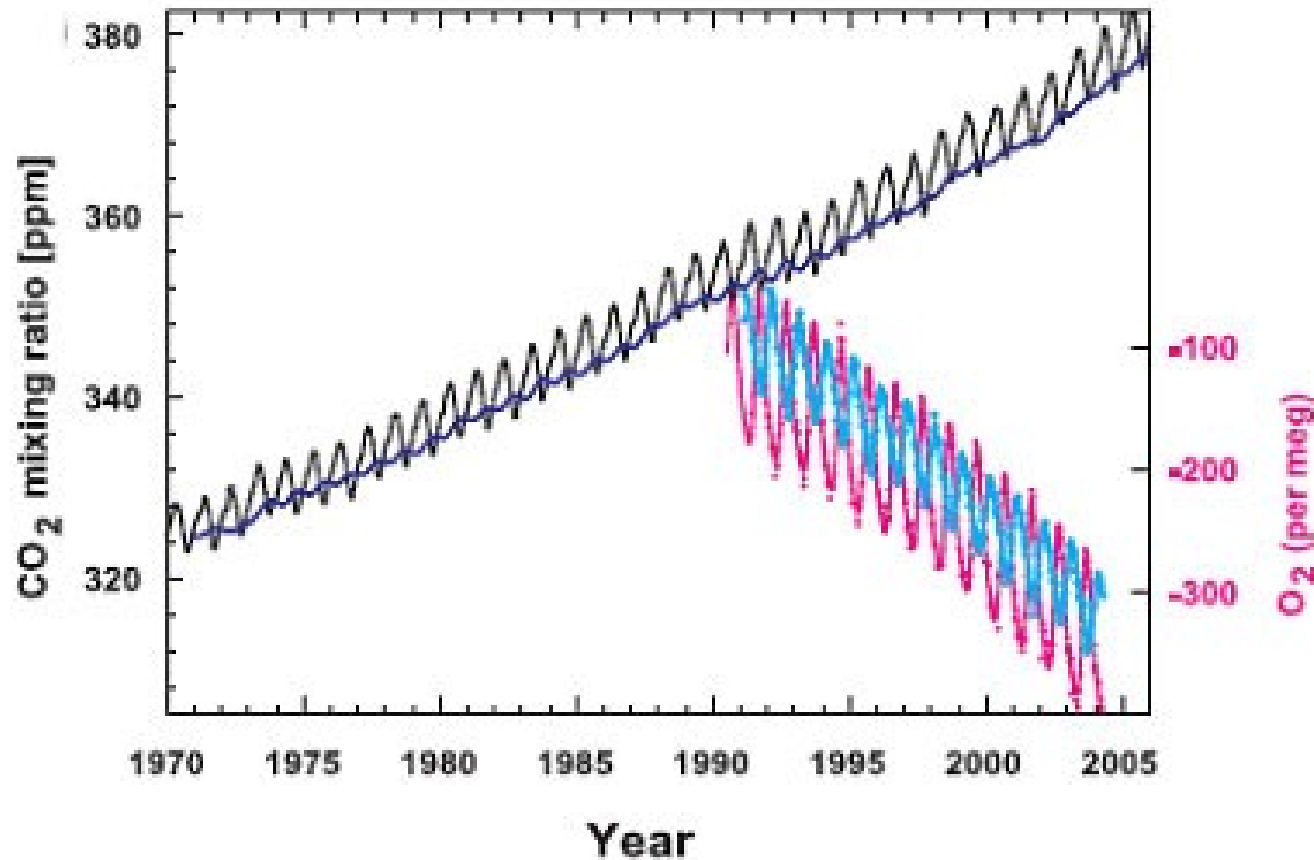
CO<sub>2</sub>



350 ppm = ? %



## Oxygen Levels are Decreasing



<http://green.yahoo.com/blog/climate411/134/how-we-know-humans-cause-global-warming-part-2-of-5-chemistry.html>

# Rekonstrukce bažiny před 300 miliony let



<http://paleobiology.si.edu/paleoArt/Techniques/pages/reconstuct9.htm>











# Uhelná elektrárna Dětmarovice

## 4 x 200 MW

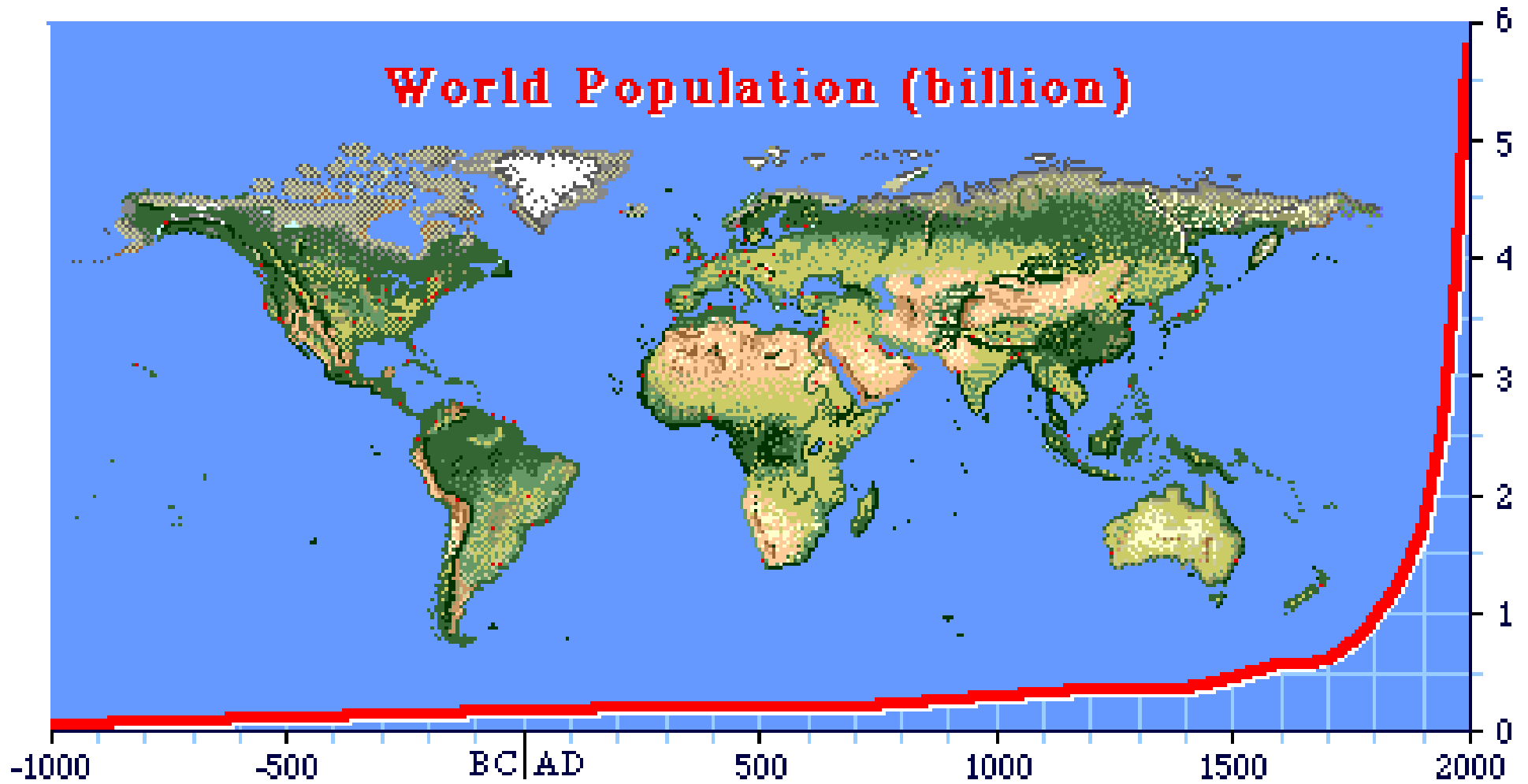






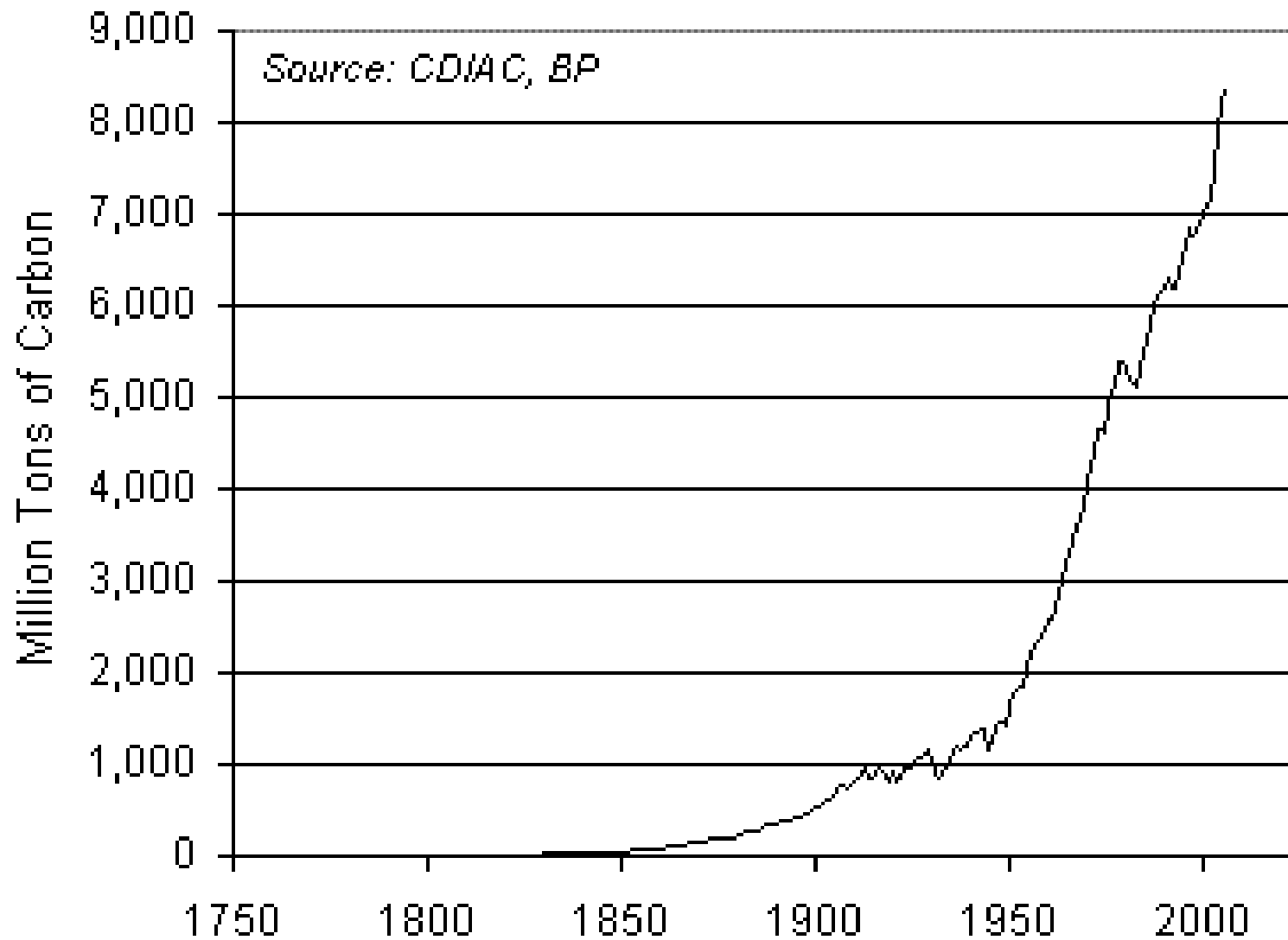


# World Population (billion)

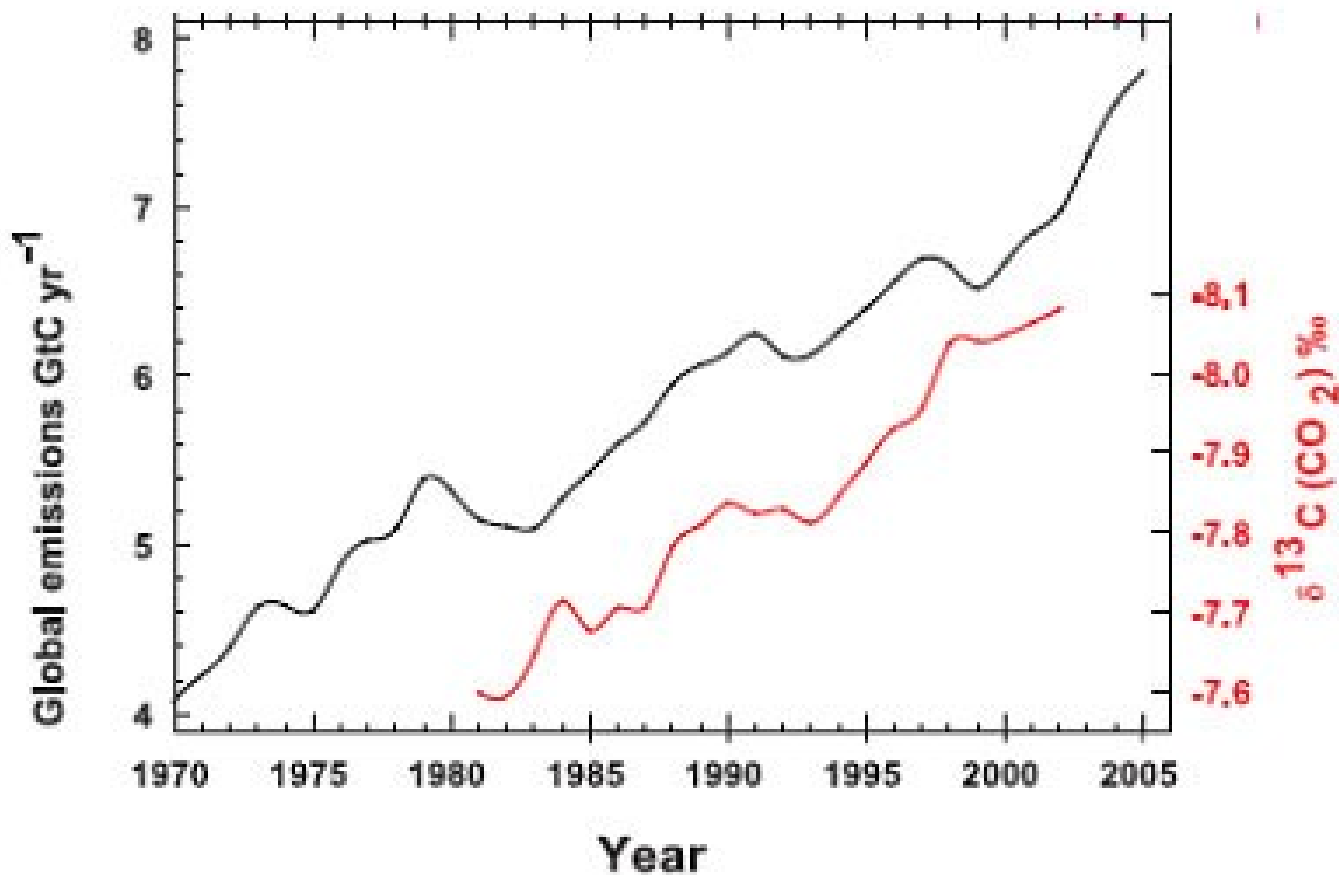


<http://www.eolss.net/>

# Global Carbon Dioxide Emissions from Fossil Fuel Burning, 1751-2006



## Changing Carbon Isotope Ratios



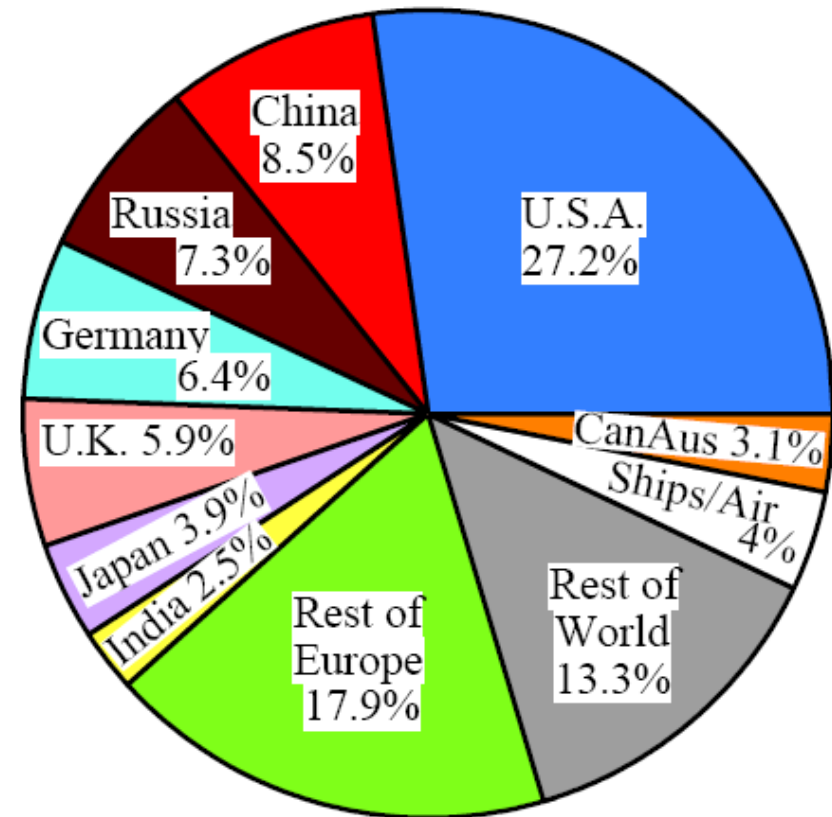
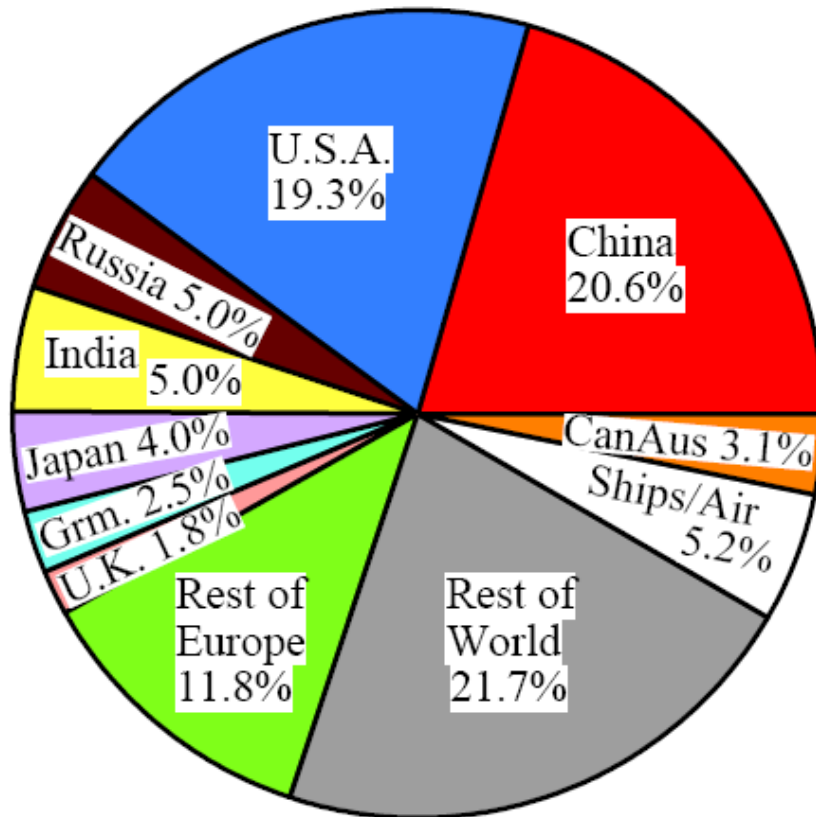
<http://green.yahoo.com/blog/climate411/134/how-we-know-humans-cause-global-warming-part-2-of-5-chemistry.html>



## Fossil Fuel CO<sub>2</sub> Emissions

(a) 2007 Annual Emissions

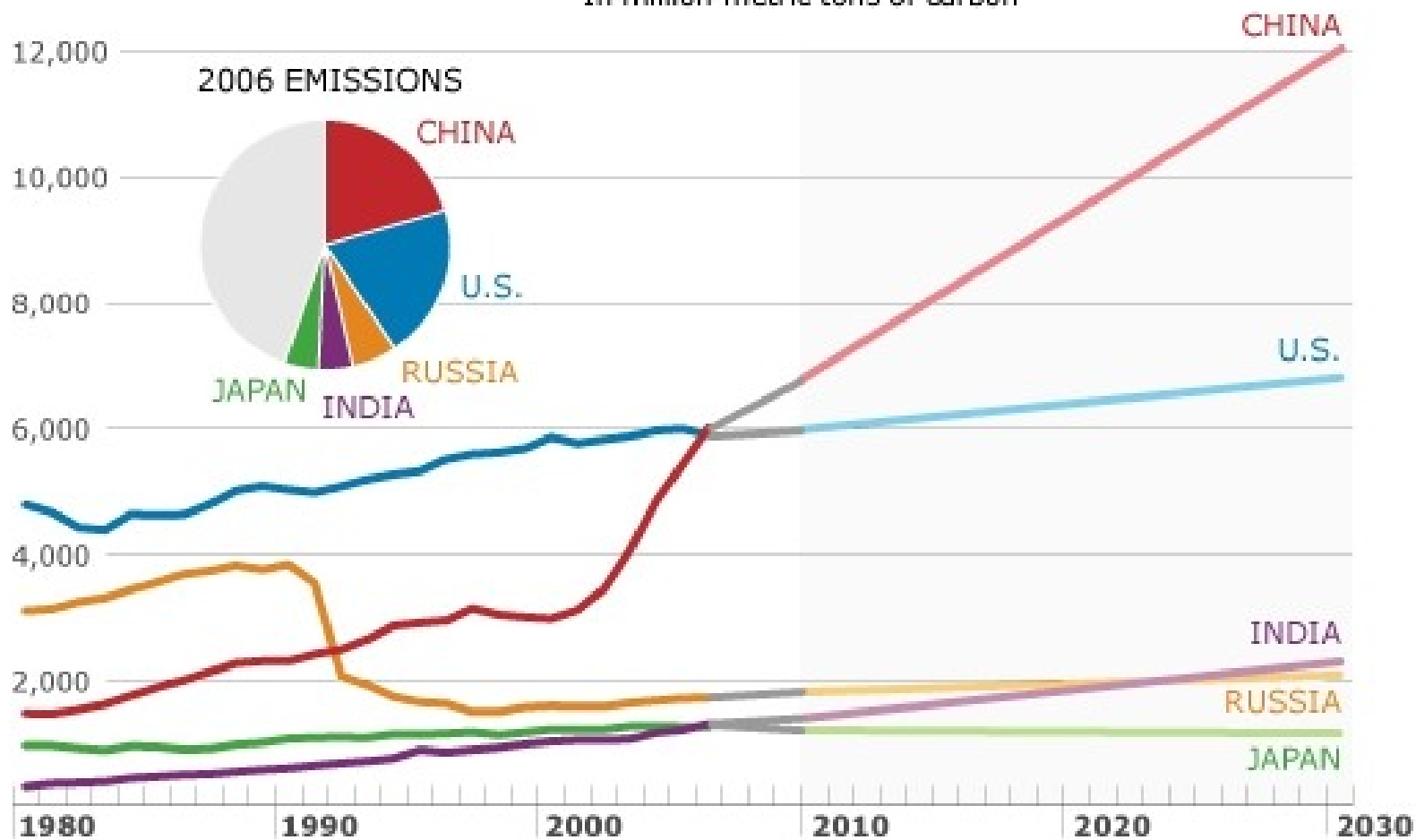
(b) 1751-2007 Cumulative Emissions



OVERALL OIL GAS COAL

### CO2 EMISSIONS AND PROJECTIONS

In million metric tons of carbon



SOURCE: Energy Information Administration



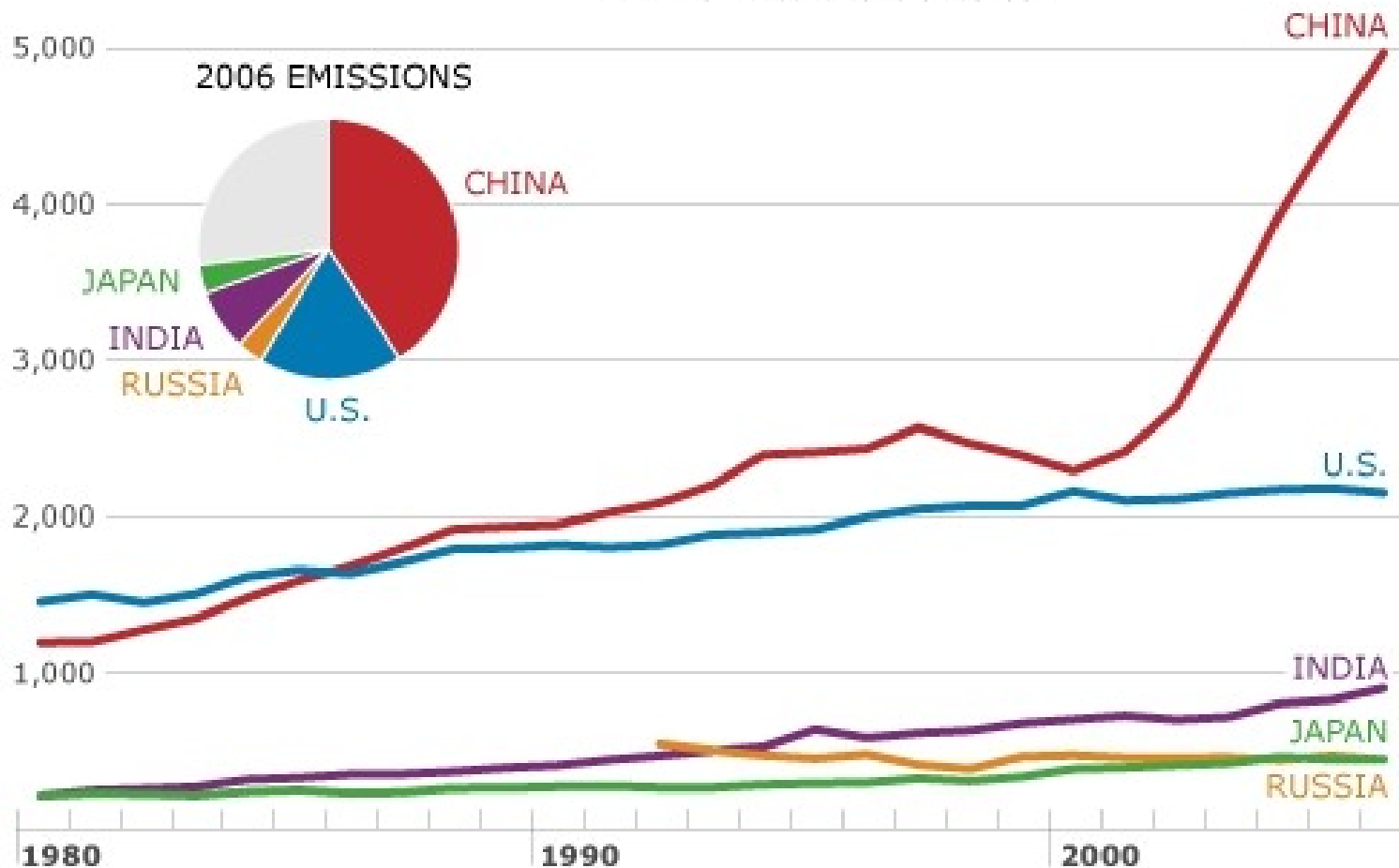
ROLL OVER THE ARROW TO SEE ORIGINAL DATA BEFORE MNN TRANSLATION.

<http://www.mnn.com/earth-matters/translating-uncle-sam/stories/eia-which-countries-produce-the-most-co2>

OVERALL OIL GAS COAL

### CO2 EMISSIONS FROM COAL

In million metric tons of carbon



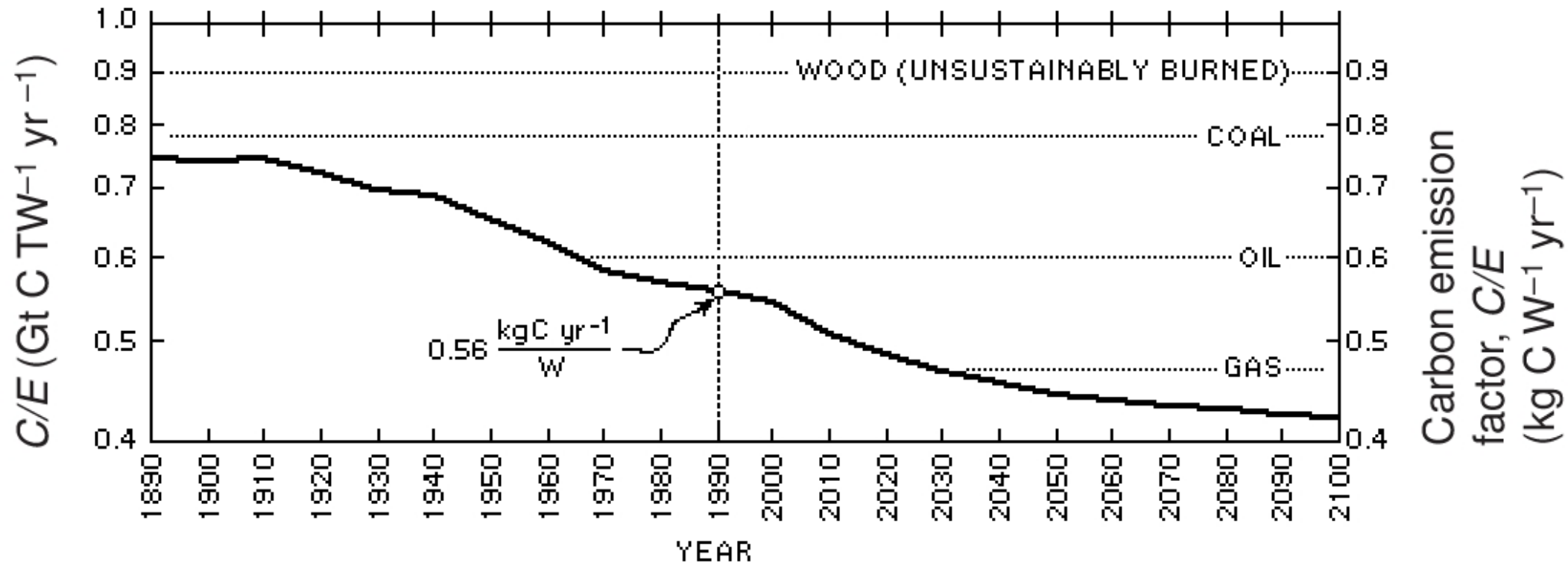
SOURCE: Energy Information Administration



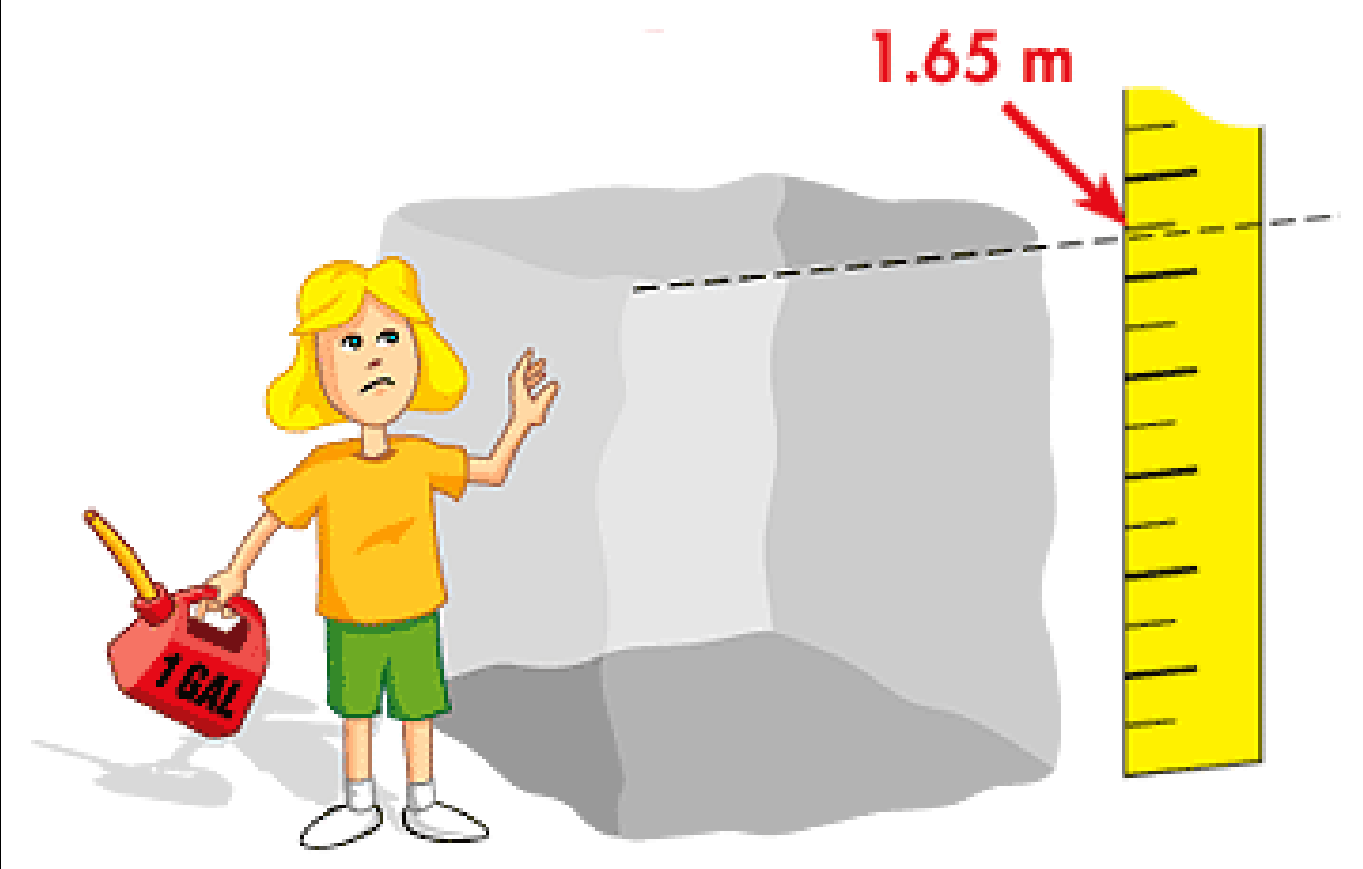
ROLL OVER THE ARROW TO SEE ORIGINAL DATA BEFORE MNN TRANSLATION.

<http://www.mnn.com/earth-matters/translating-uncle-sam/stories/eia-which-countries-produce-the-most-co2>

# Carbon Intensity of Energy Mix

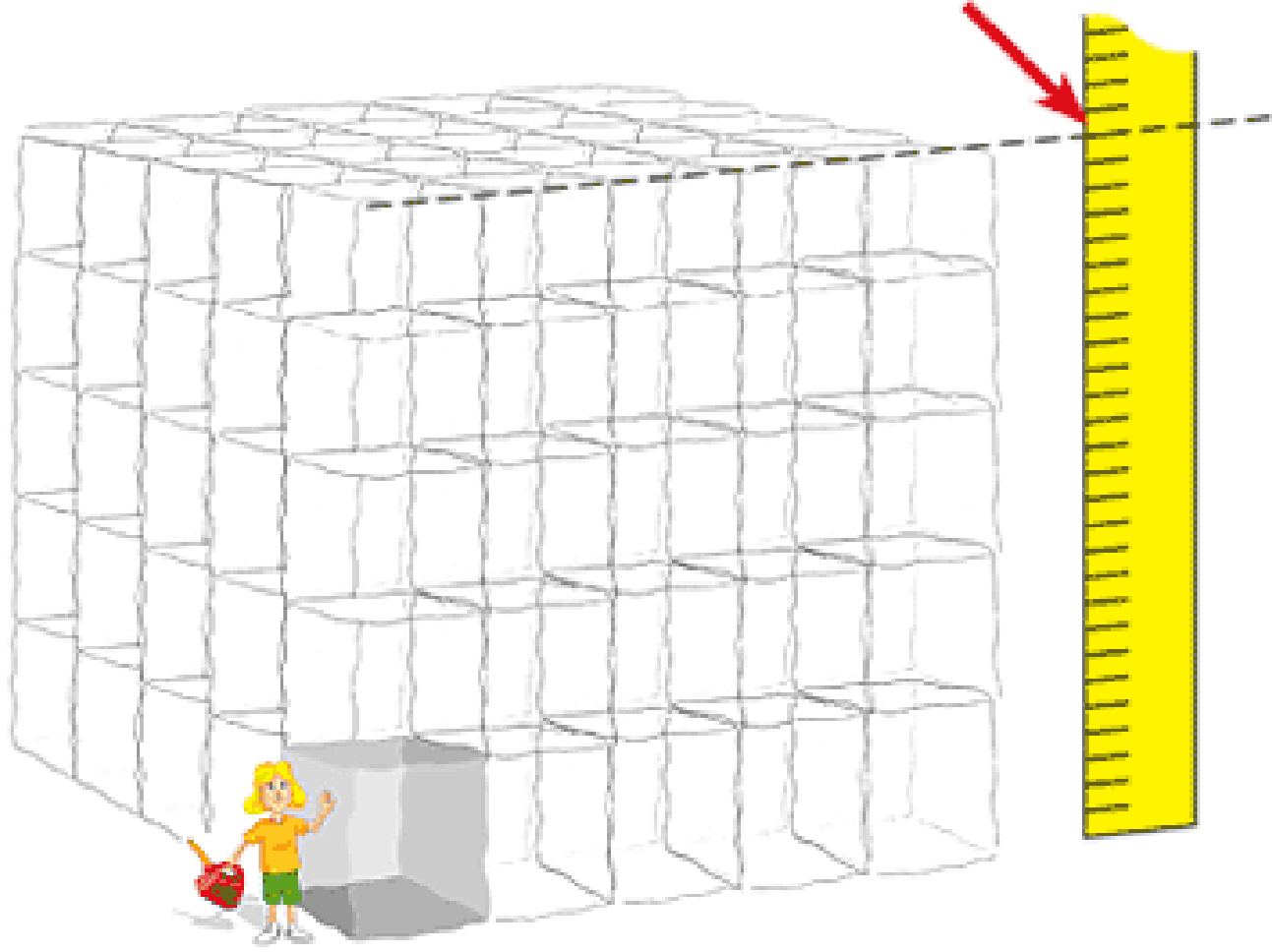


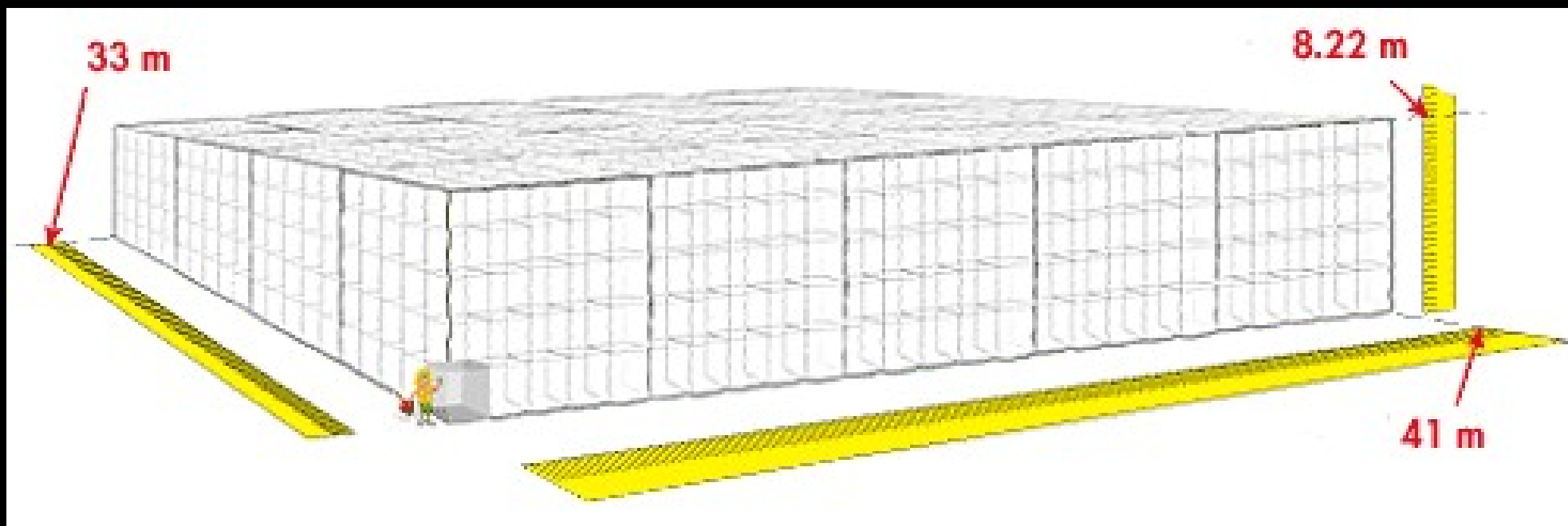
*M. I. Hoffert et. al., Nature, 1998, 395, 881*

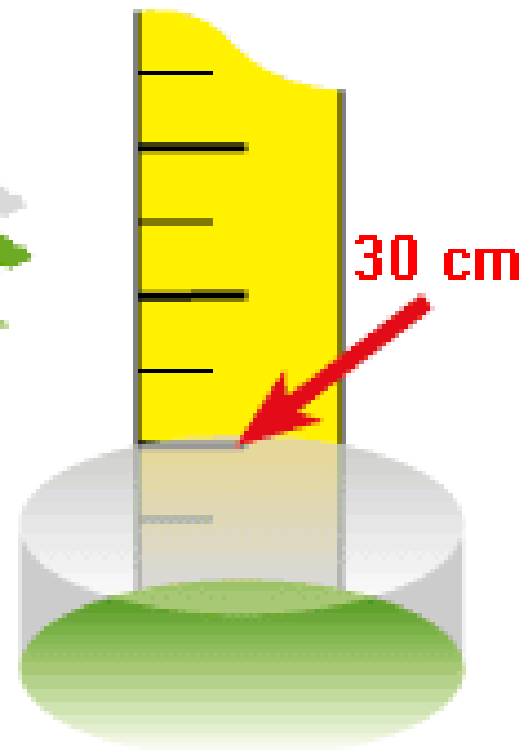




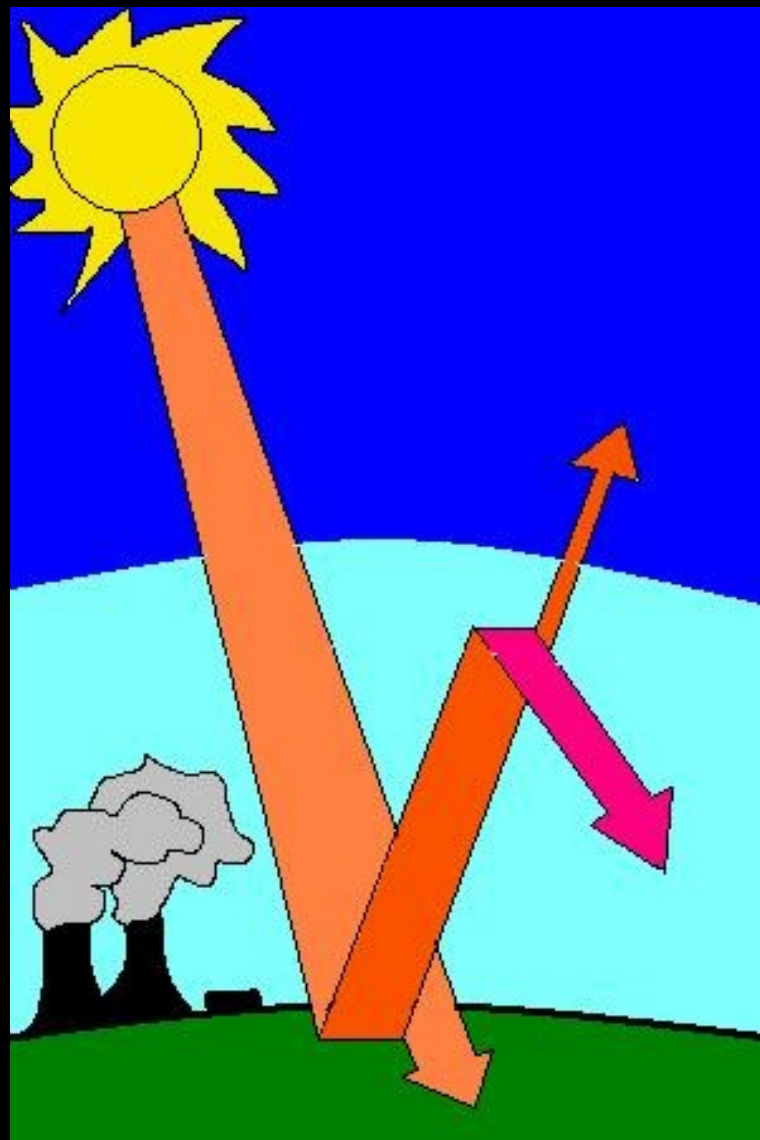
8.22 m



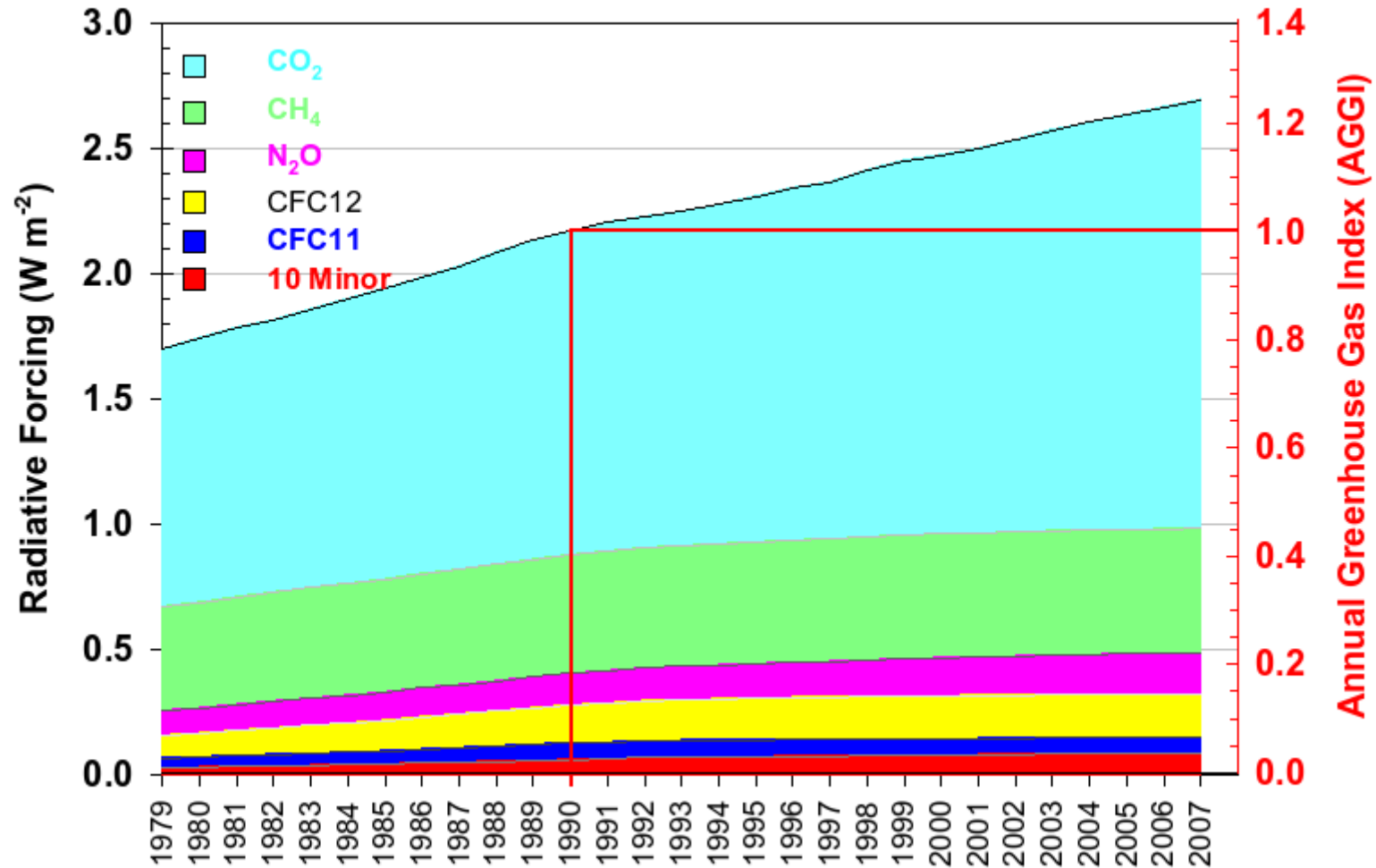




# Skleníkový jev



# NOAA Annual Greenhouse Gas Index



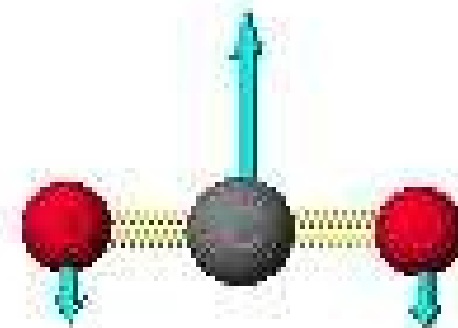
<http://www.esrl.noaa.gov/gmd/aggi/>



# Carbon Dioxide - Infrared Absorption



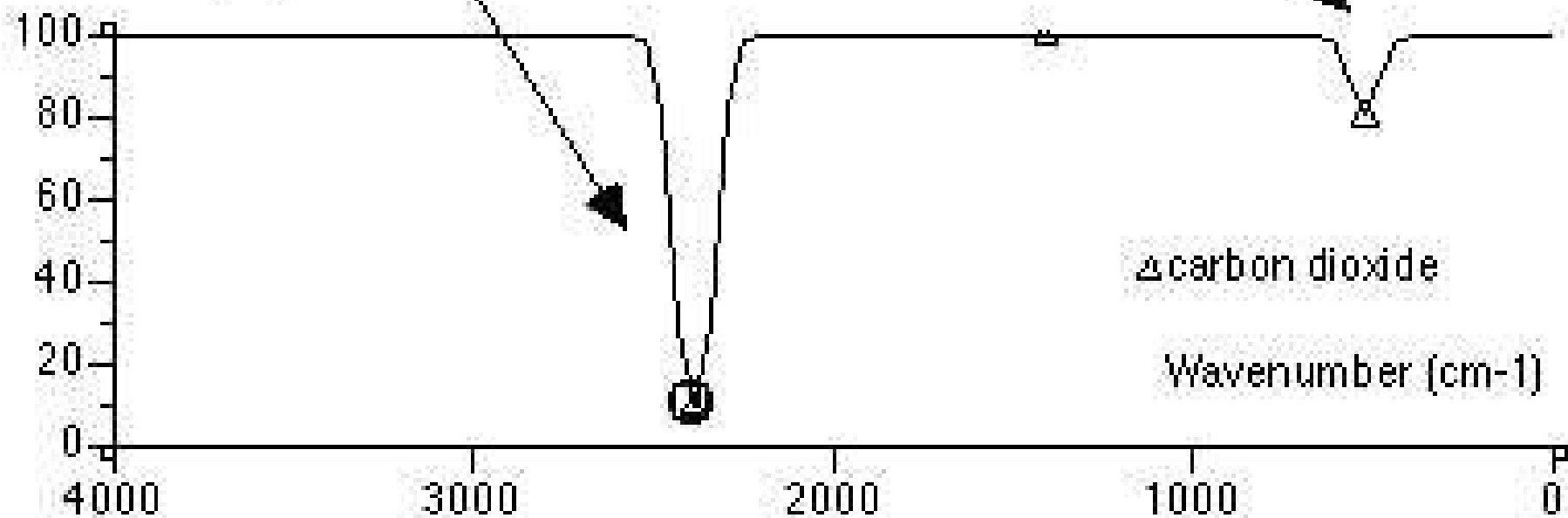
**bond stretching**



**bond bending**

Transmittance (%)

**Vibrational Spectra**



# Joseph Fourier - 1824



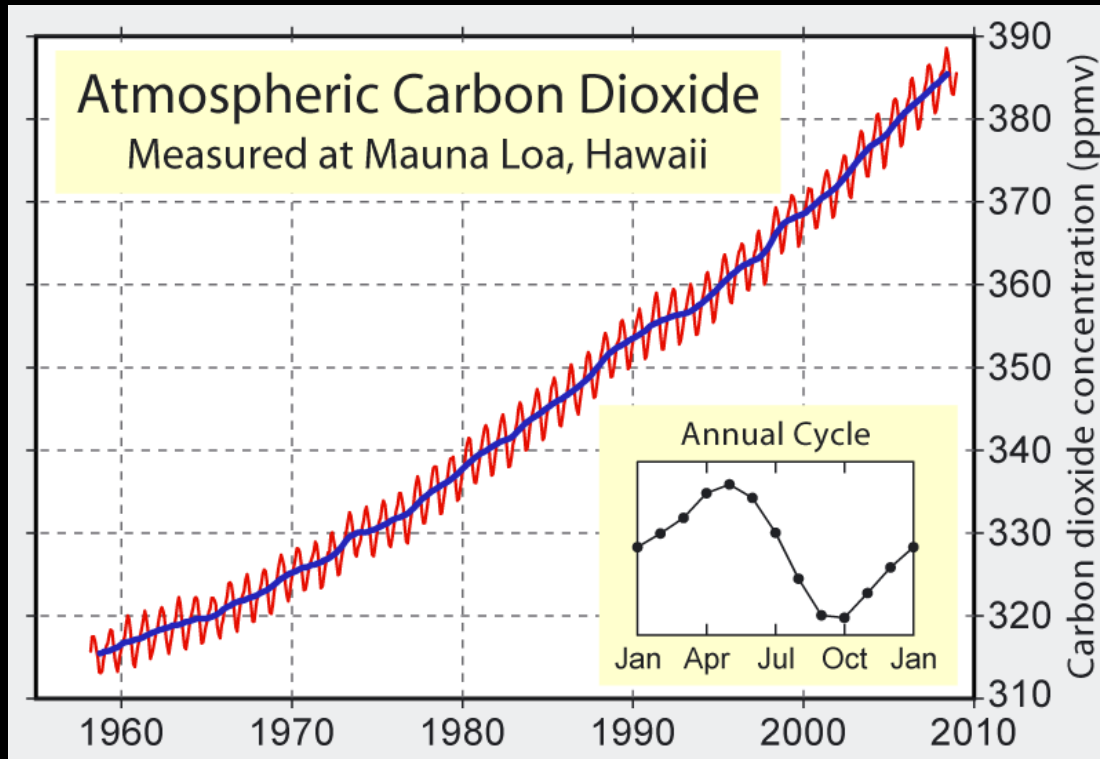
# John Tyndall - 1859



# Svante Arrhenius - 1894

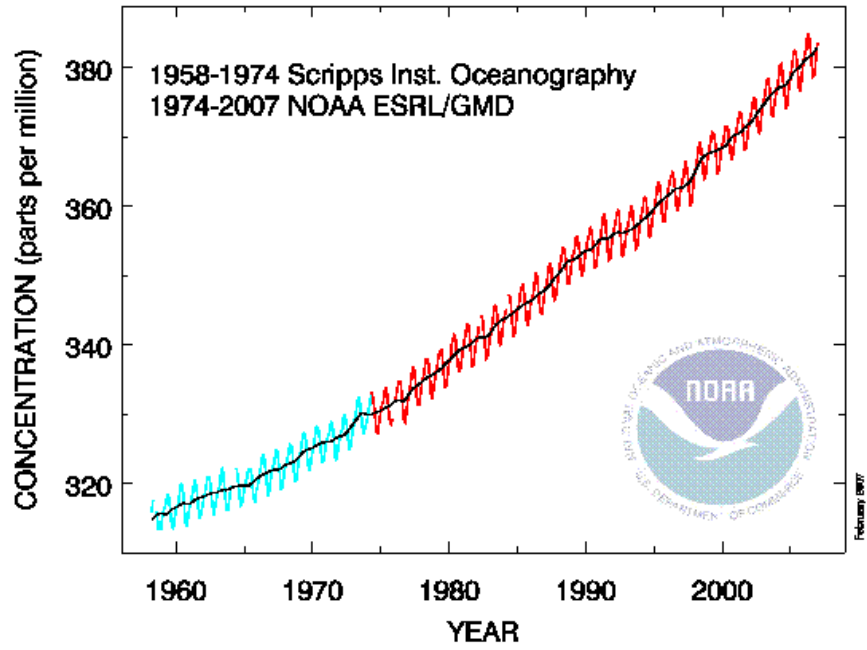


# Charles David Keeling - 1958

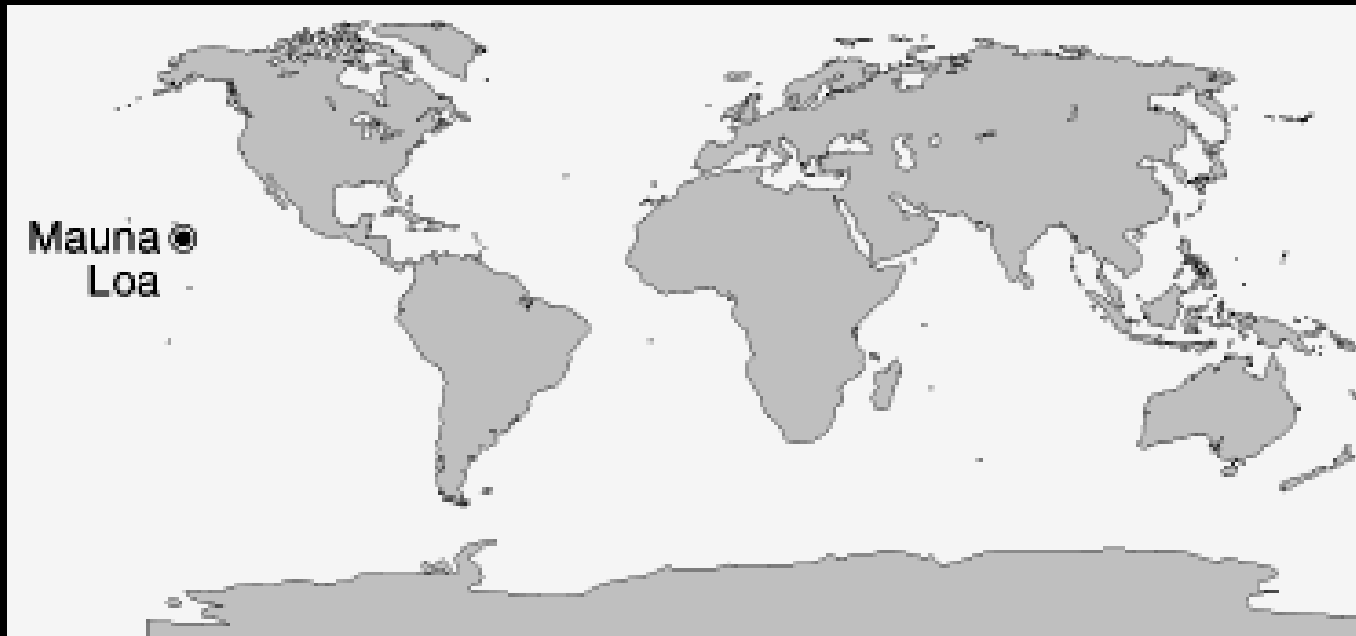
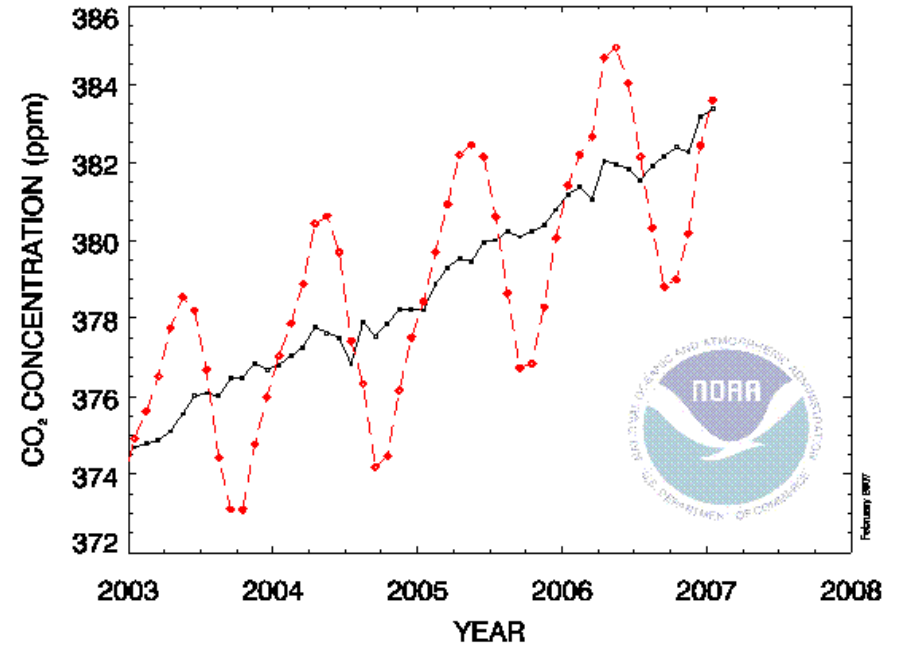




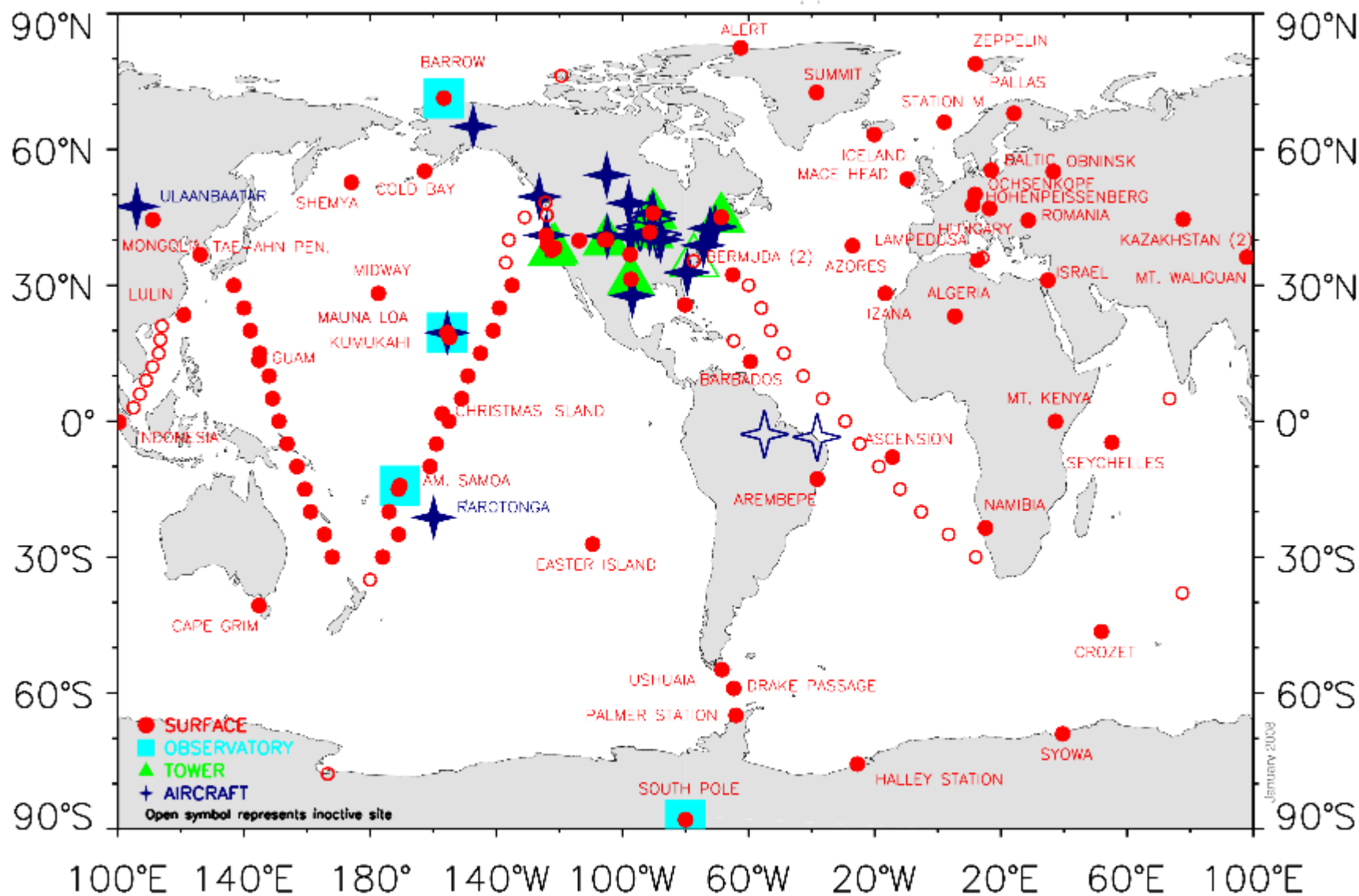
### Atmospheric CO<sub>2</sub> at Mauna Loa Observatory



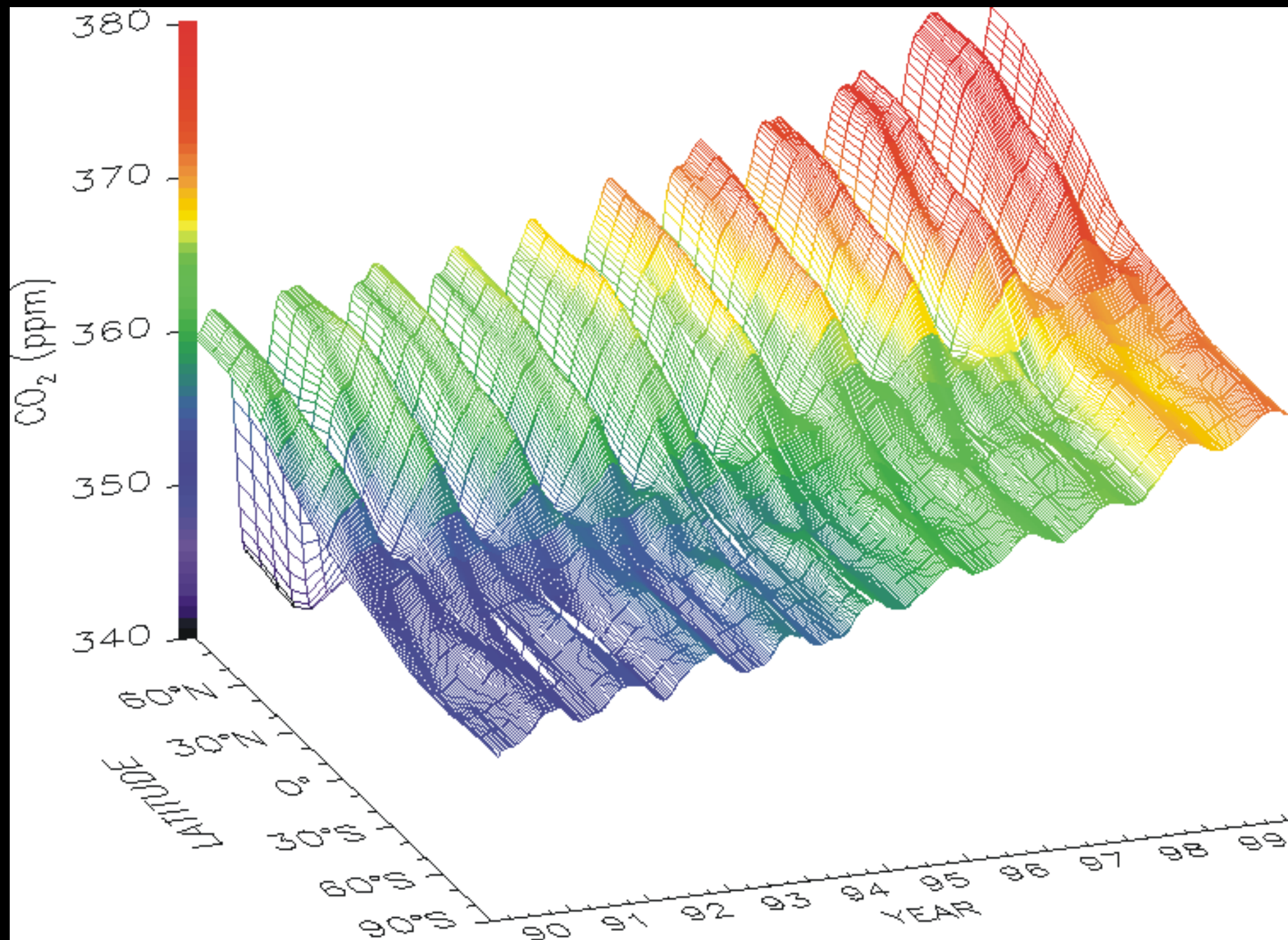
### RECENT MONTHLY MEAN CO<sub>2</sub> AT MAUNA LOA



# The NOAA Earth System Research Laboratory global cooperative air sampling network



<http://www.esrl.noaa.gov/gmd/aggi/>

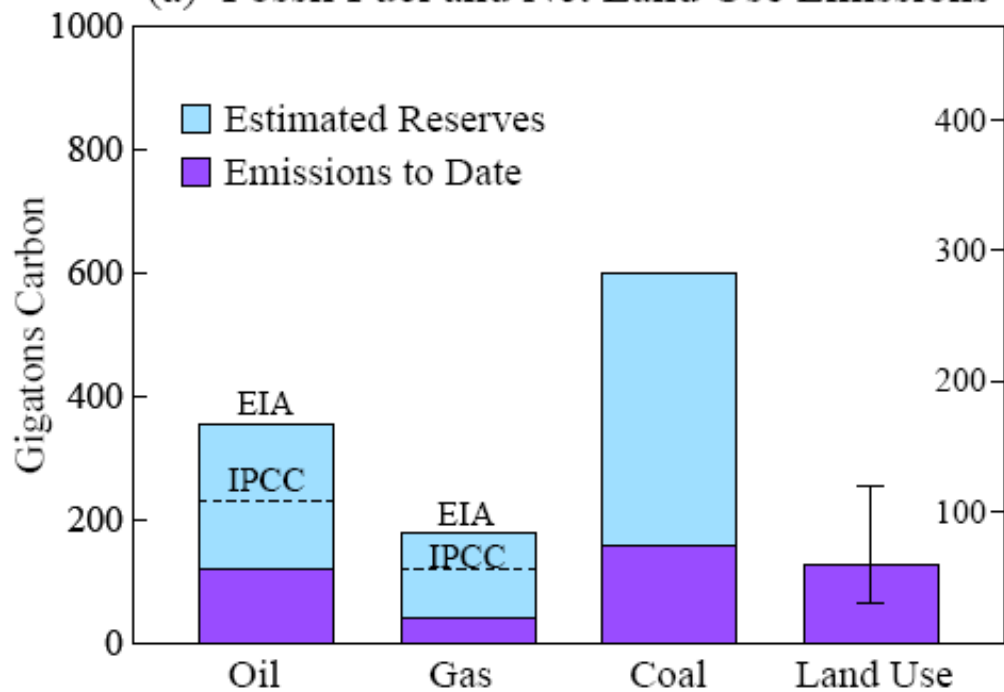


**Cíl pro CO<sub>2</sub>:**  
**< 350 ppm**

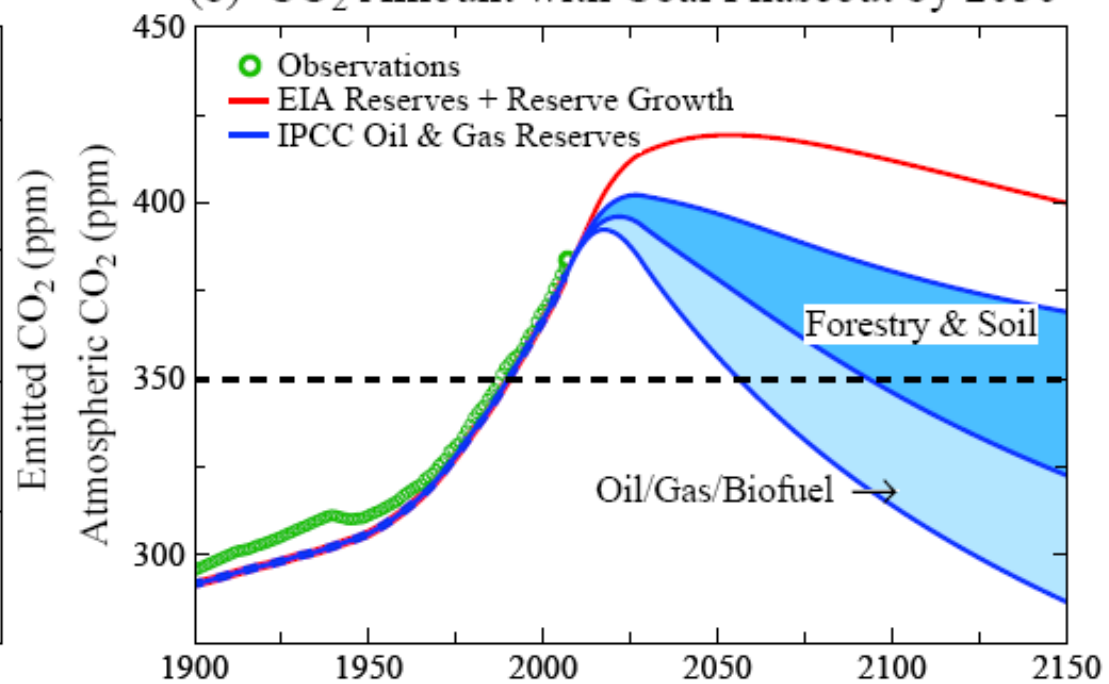
Pro záchranu světa, planety,  
na níž se vyvynula civilizace.

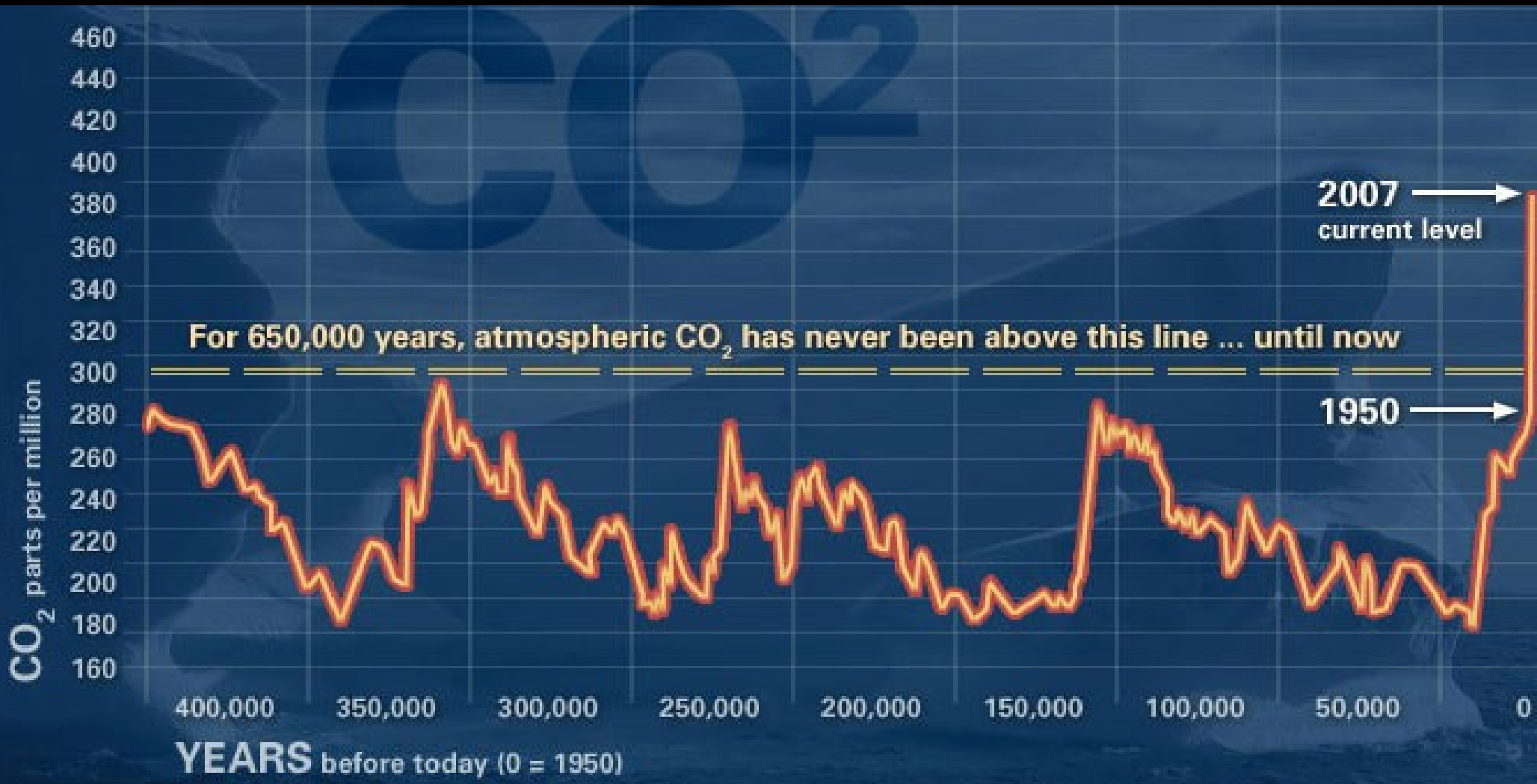
Technicky splnitelný, ale záklaním  
podmínkou je přestat spalovat uhlí.

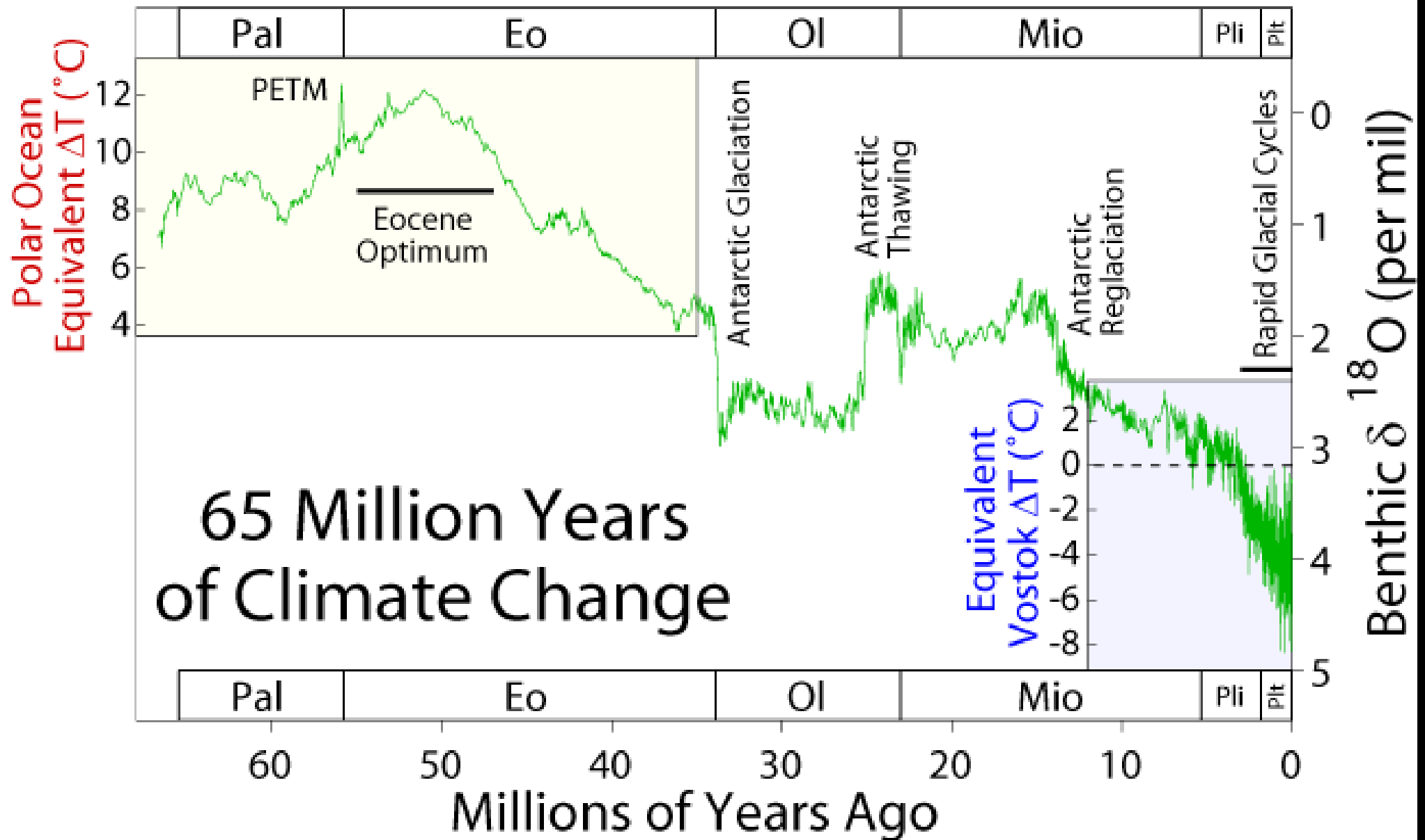
(a) Fossil Fuel and Net Land Use Emissions



(b) CO<sub>2</sub> Amount with Coal Phaseout by 2030

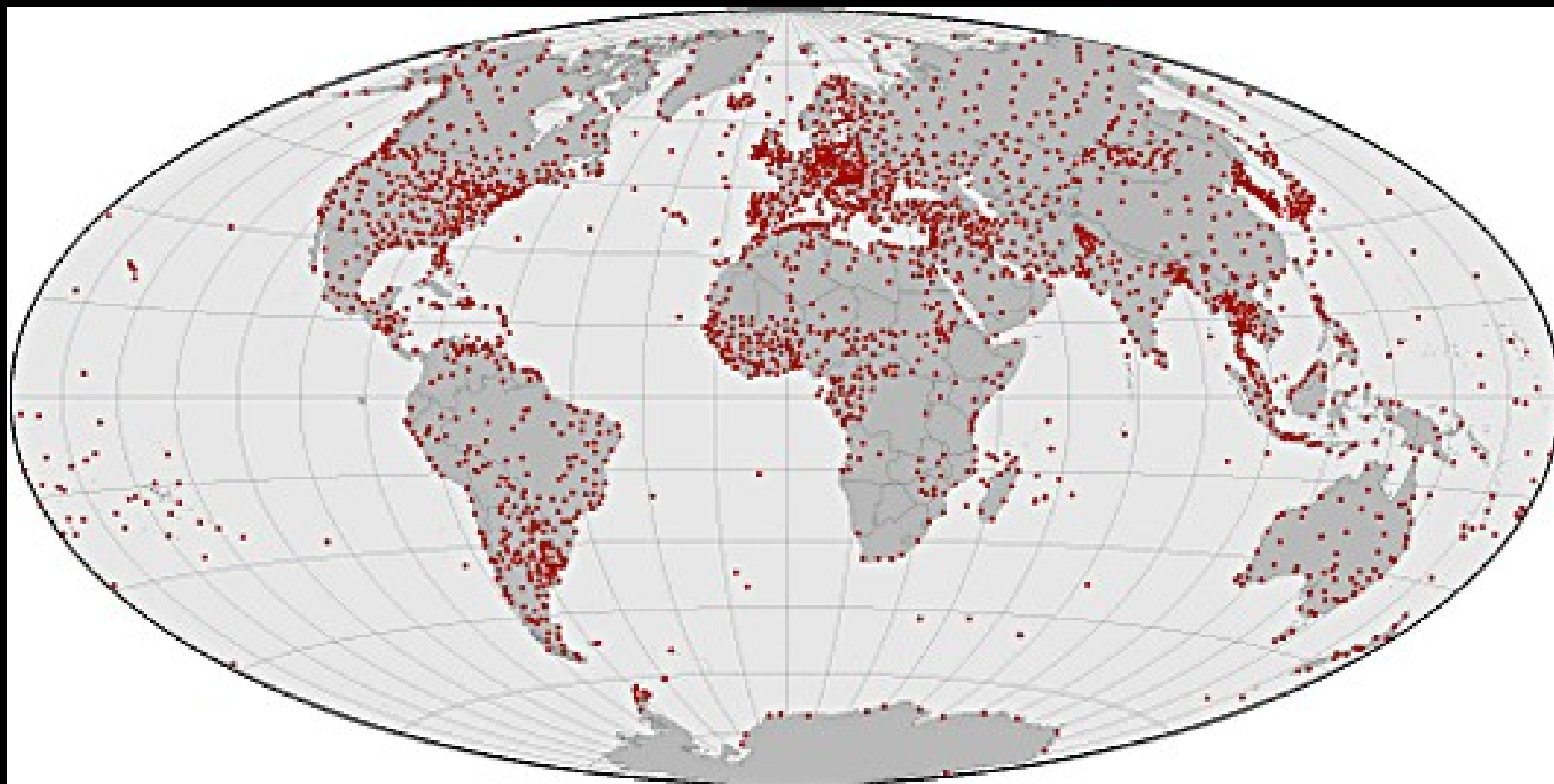






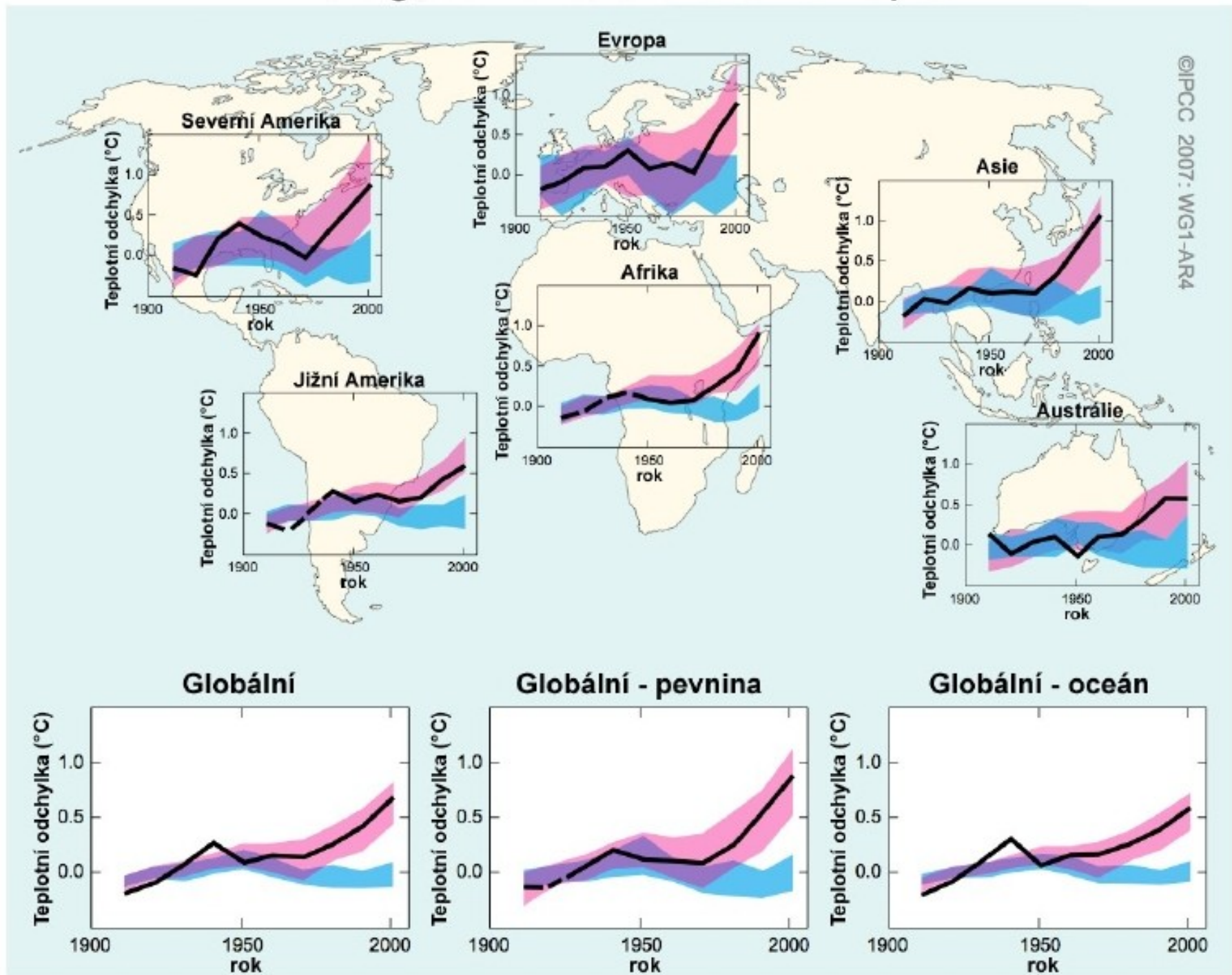


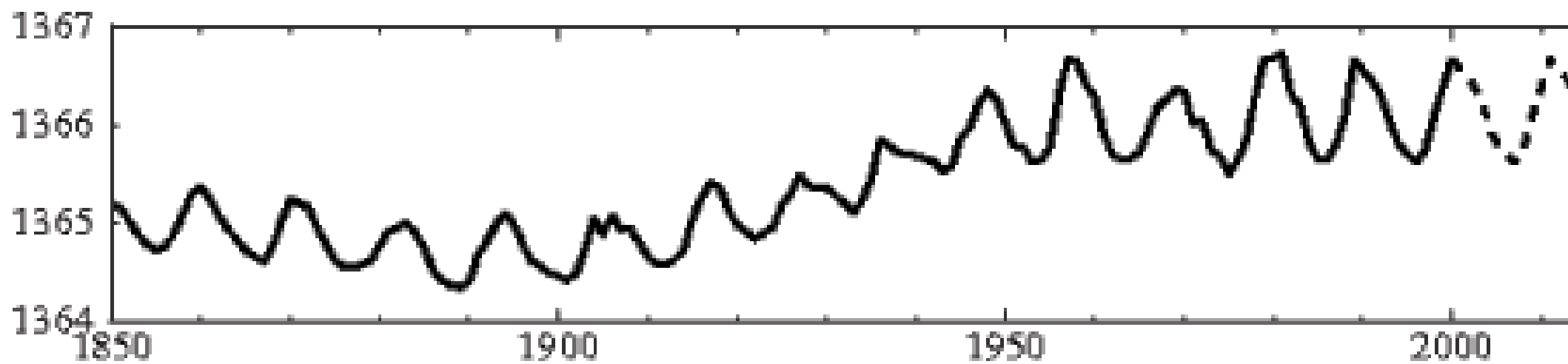
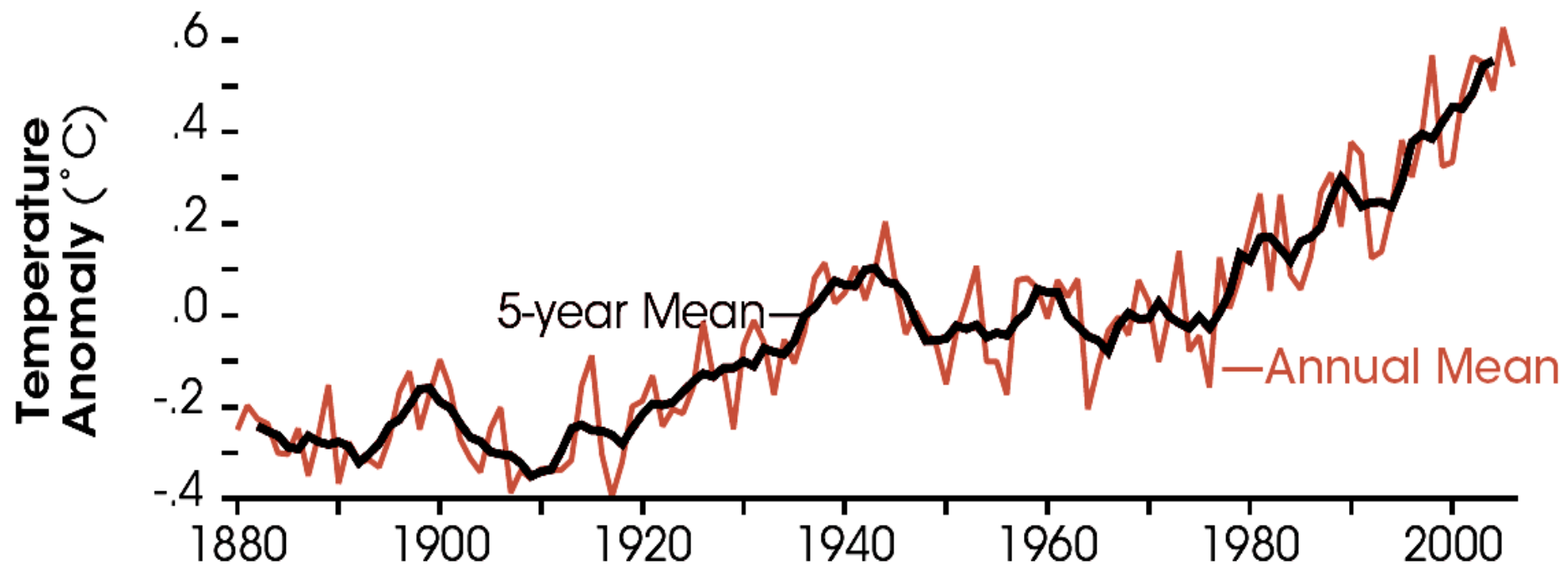
# Síť meteorologických stanic



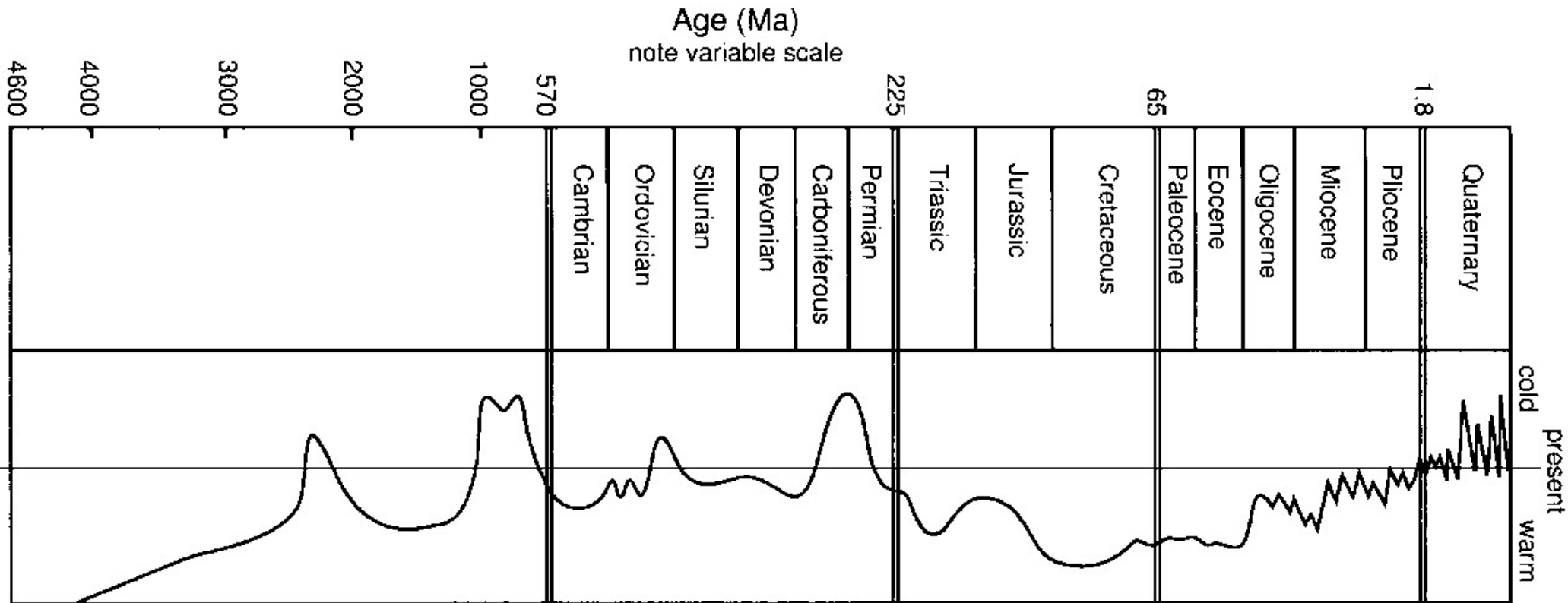


# Změna globálních a kontinentálních teplot





# Teplota za 4,6 miliard let



<http://math.ucr.edu/home/baez/temperature/>

The Last 20,000 Years seems to have been Ideal for the Development of Human Societies. Is this a Historic “Sweet Spot” that Enabled Humans to Flourish?

