

Update on Global Warming: Hot Air and Cold Facts



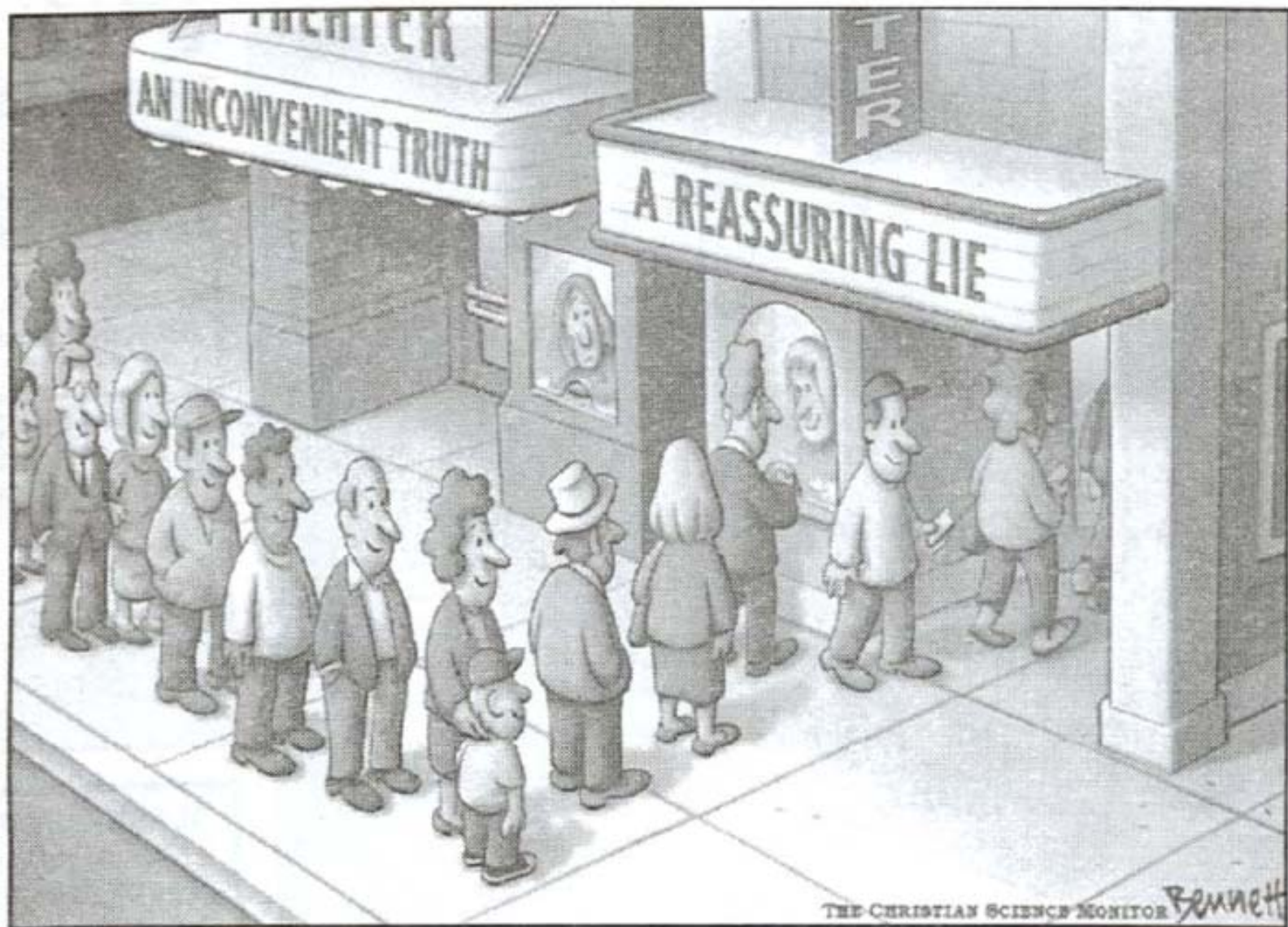
T.J. Blasing, Oak Ridge National Laboratory, June 7, 2007

For amusement, read this: A freshman at Eagle Rock Junior High won first prize at the Greater Idaho Falls Science Fair, April 26. He was attempting to show how conditioned we have become to alarmists practicing junk science And spreading fear of everything in our environment. In his project he urged People to sign a petition demanding strict control or total elimination of the Chemical “dihydrogen monoxide.” And for plenty of good reasons, since:

- 1. it can cause excessive sweating and vomiting,**
- 2. it is a major component in acid rain.**
- 3. it can cause severe burns in its gaseous state**
- 4. accidental inhalation can be fatal.**
- 5. It contributes to erosion**
- 6. It decrease effectiveness of automobile breaks**
- 7. It has been found in tumors of terminal cancer patients**

He asked 50 people if they supported a ban on the chemical; 43 said ‘yes’ 6 were undecided and only one knew the chemical was water. The title of his prize-winning project was “How gullible are we?”

He feels the conclusion is obvious.



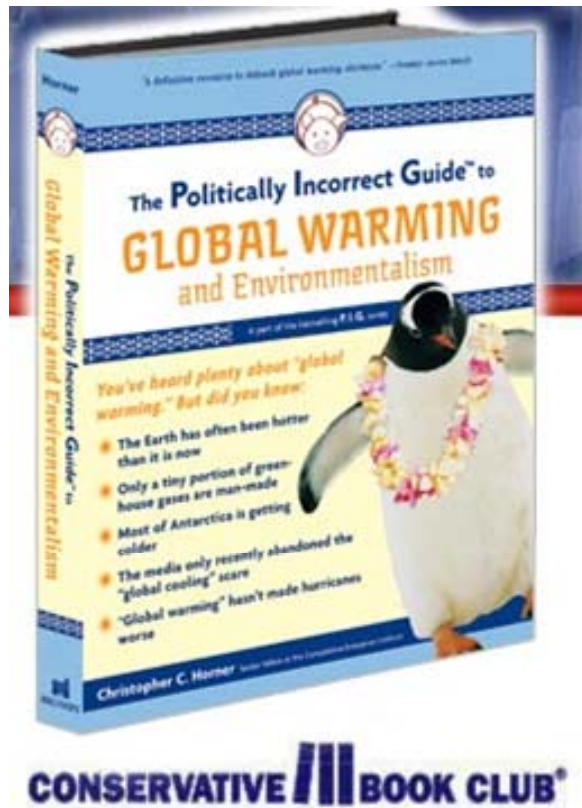
THE CHRISTIAN SCIENCE MONITOR *Bennett*

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Global Warming May Kill Billions This Century

In the 1970s, James Lovelock became one of the world's most celebrated environmental scientists after he proposed the Gaia theory, the idea of Earth as a self-sustaining organism with a built-in control system that keeps the environment in balance and the planet fit for life. Writing in *The Independent* newspaper, Lovelock warns that the world has already passed the point of no return with global warming, and that climate change will kill billions of people in this century as the Earth reaches a "coma" state from which it may not recover for 100,000 years.



Global Warming: why it is the Left's last best chance to gain a stranglehold on our political system and economy... and how we can fight back

HURRY!

**Offer Expires:
4/8/2007**

He explains why, although Al Gore and his cronies among the media elites and UN globalists endlessly bleat that "global warming" is an unprecedented global crisis, they really think of it as a dream come true.

Why all the hot air? See below

From *The Christian Science Monitor* April 3, 2007

Warren Richey and Brad Knickerbocker

Supreme Court: EPA must address climate risk

The high court's 5-to-4 ruling Monday rejects the White House's view and hands environmentalists a major victory.

Four questions:

Are there trends in atmospheric concentrations of radiatively active gases in the Earth's atmosphere?

Are any such increases anthropogenic?

Are there trends in the earth's near-surface air temperature?

What are the causes of any such trends?

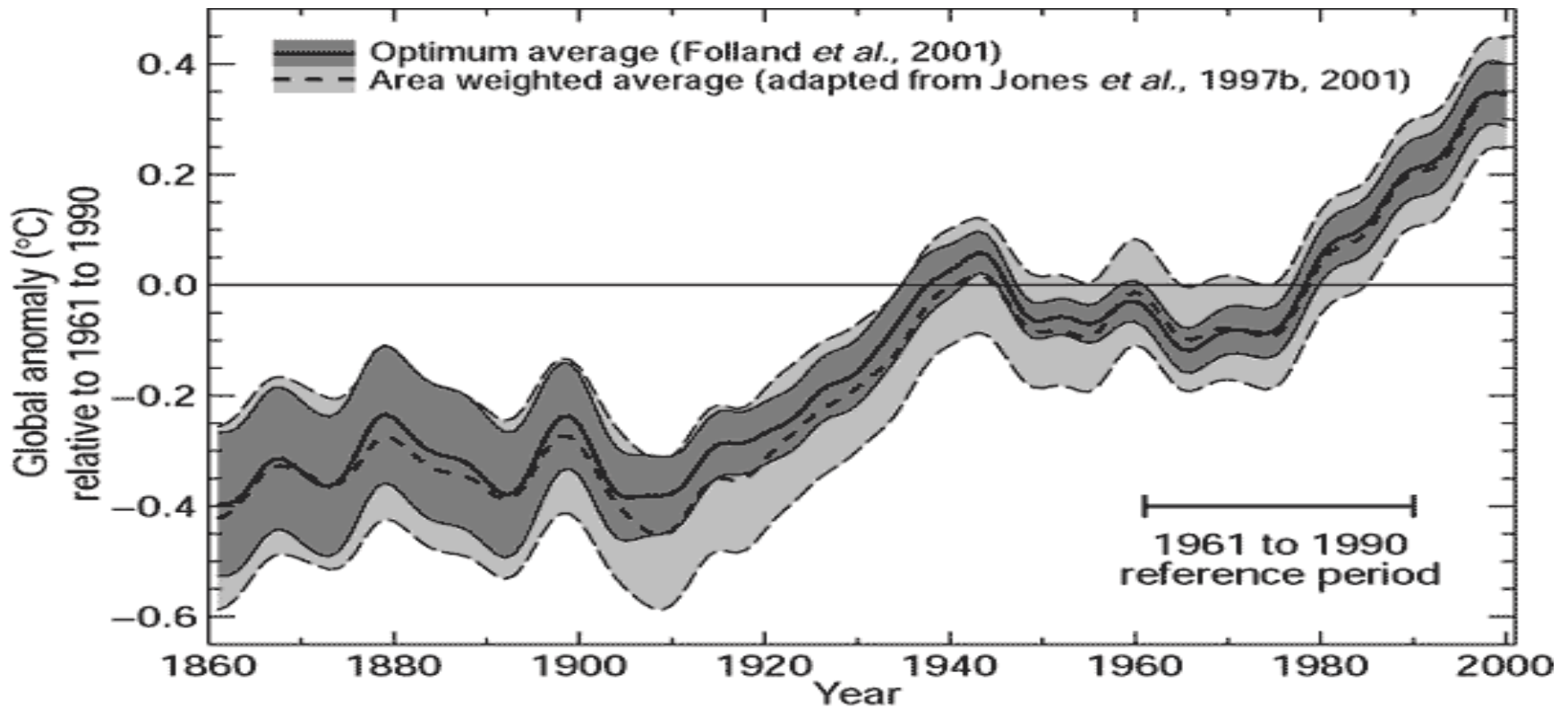
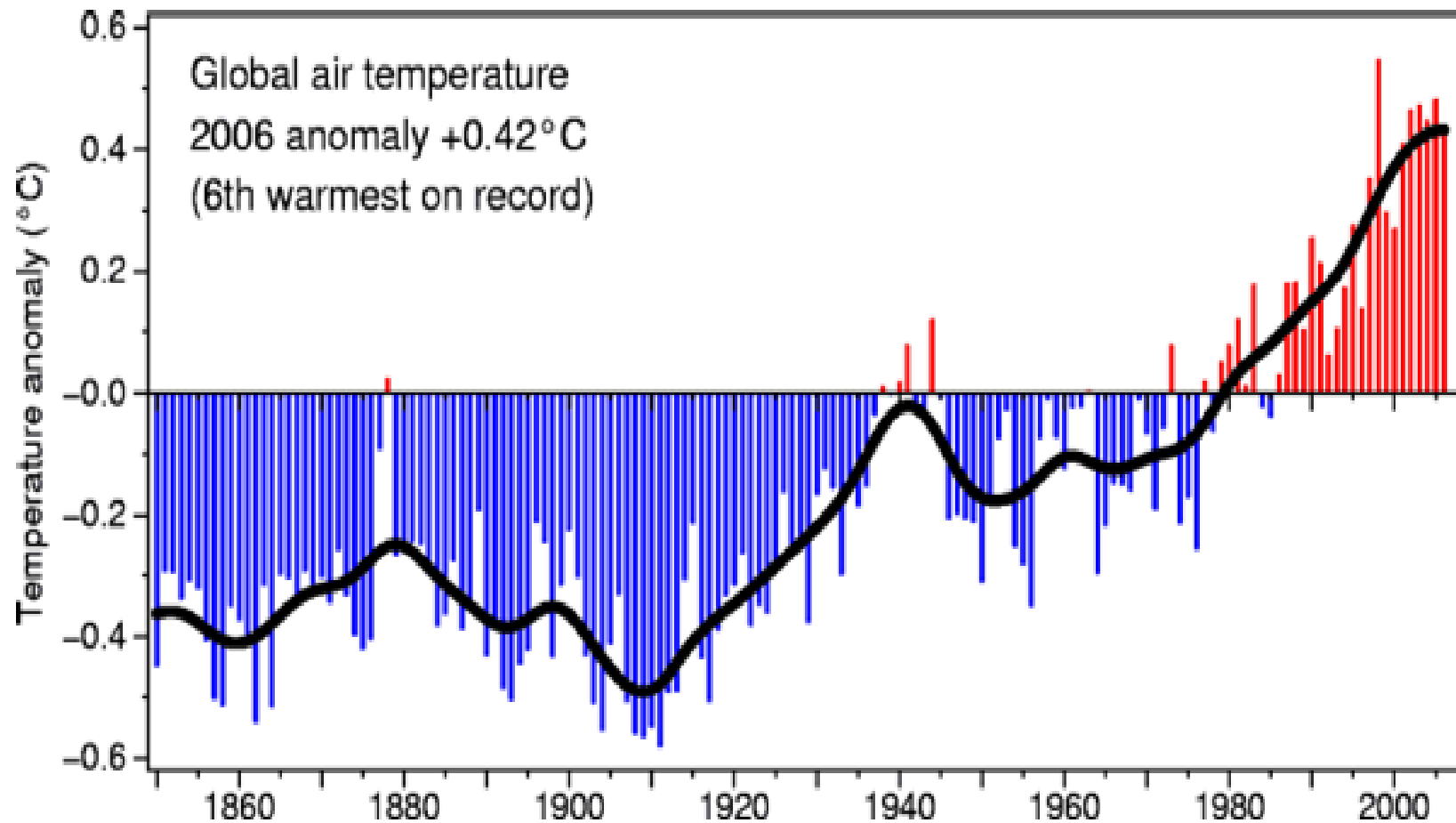


Figure 2.8: Smoothed annual anomalies of global combined land-surface air and sea surface temperatures ($^{\circ}\text{C}$), 1861 to 2000, relative to 1961 to 1990, and twice their standard errors. The smoothed curves and shaded areas were created using a 21-point binomial filter giving near-decadal averages, with appropriate errors. Optimally averaged anomalies and uncertainties (Folland et al., 2001) – solid curve and dark shading; standard area weighted anomalies and uncertainties (adapted from Jones et al., 1997b, 2001) – dashed curve and light shading. Note that uncertainties decrease after 1941 due to the cessation of uncertainties due to bias corrections in sea surface temperature. On the other hand, uncertainties due to urbanisation of the land component, assessed as zero in 1900, continue to increase after 1941 to a maximum in 2000.

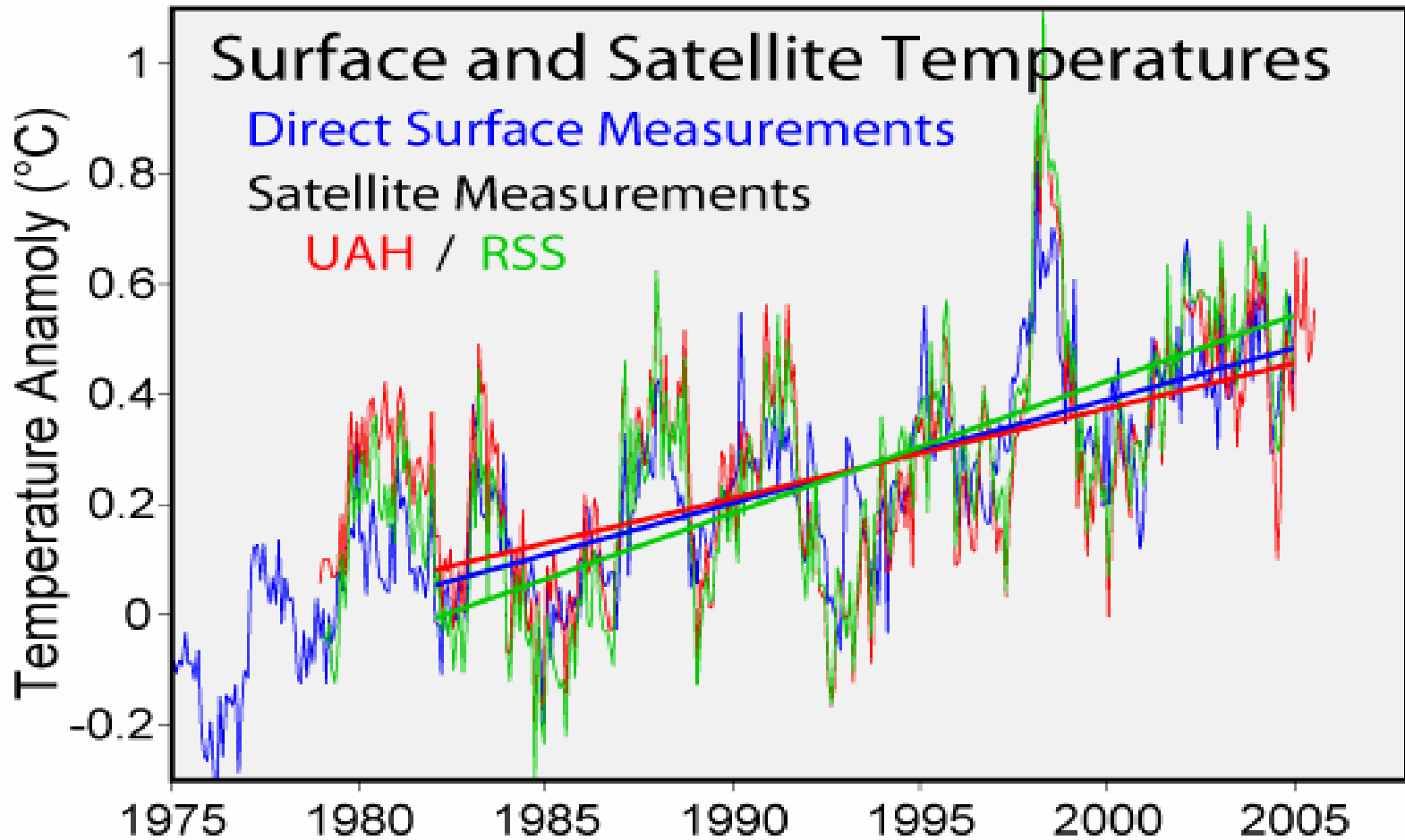
Global Temperature Record

Phil Jones



RSS = Remote Sensing Systems

UAH = University of Alabama, Huntsville





CO₂ Science

Reference

Alpert, P., Kishcha, P., Kaufman, Y.J. and Schwarzbard, R. 2005. Global dimming or local dimming?: Effect of urbanization on sunlight availability. *Geophysical Research Letters* **32**: L17802, doi:10.1029/2005GL023320.

Background

Several researchers have reported a widespread decrease in the amount of solar radiation received at the earth's surface during the second half of the 20th century, a phenomenon that has come to be known as *solar dimming* (Gilgen *et al.*, 1998; Liepert, 2002; [Stanhill and Cohen, 2001](#); Cohen *et al.*, 2004). These findings have long intrigued us, and we have written previously on the subject, most recently in an [editorial](#) in which we note that the since the late 1980s solar dimming may have reversed direction to become solar *brightening* (Pinker *et al.*, 2005; Wild *et al.*, 2005). In the present study, we report on the work of Alpert *et al.*, who hypothesized that the dimming of the 1950s through 1980s could be explained by the anthropogenic release of pollutants, such as sulfates, nitrates and black carbon, which acted to reduce the amount of solar radiation received at the earth's surface.

What was done

For the 25-year period 1964-1989, the authors examined trends in the surface receipt of solar radiation at 144 urban sites (population greater than 100,000 persons) and 174 rural sites (population less than 100,000 persons) for various latitudinal bands as well as for the entire globe.

What was learned

For the globe as a whole, both urban and rural locations showed a decline in surface solar radiation over the period of study; however, the rate of decline at the urban locations was approximately 2.6 times larger than that observed at the rural locations ($-0.41 \text{ Wm}^{-2}\text{yr}^{-1}$ vs. $-0.16 \text{ Wm}^{-2}\text{yr}^{-1}$). In addition, a sharper decline in surface solar radiation receipt was found between 10°N and 40°N , which latitudinal zone is nearly coincident with the zone of maximum fossil fuel emissions in the Northern Hemisphere reported by Stanhill and Cohen (2001) for the period 1960-1990. On the other hand, the latitude band from 15°S to 15°N displayed the opposite trend. Instead of dimming, this region experienced a *brightening* of $0.58 \text{ Wm}^{-2}\text{yr}^{-1}$, which is consistent with the findings of Pinker *et al.* (2005), who reported a persistent increase in surface solar radiation over the latitudes 20°S to 20°N based on satellite data.

What it means

According to Alpert *et al.*, their findings suggest that solar dimming is "significantly dominated by large cities' contributions to the atmospheric pollution," and that it is "essentially a local phenomenon, observed only in a limited part of the total land area." In addition, we note that the magnitudes of the original dimming and the more recent brightening are much greater than the magnitude of the concomitant increase in total greenhouse-gas-induced radiative forcing, so much so, in fact, as to make the latter phenomenon one of relatively minor significance compared to the dimming and brightening phenomena, particularly in the places where they are most strongly expressed. Hence, there is yet another good reason to suggest that the global instrumental temperature record may be significantly "polluted," and in a way that has heretofore not been adequately appreciated.

GEOPHYSICAL RESEARCH LETTERS, VOL. 32, L17802, doi:10.1029/2005GL023320, 2005

Global dimming or local dimming?: Effect of urbanization on sunlight availability

Pinhas Alpert,¹ Pavel Kishcha,¹ Yoram J. Kaufman,² and Rotem Schwarzbard¹

Received 22 April 2005; revised 4 July 2005; accepted 22 July 2005; published 2 September 2005.

Table 1. Resulting Slopes (α) for Long-Term Variations (1964–1989) Averaged Within the Specified Group of Sites Located in the Specified Latitudinal Zones^a

Latitudinal Zone	Number of Sites Used	α , W/m ² /yr	R ²	p
	All sites			
Global scale	318	−0.27	0.43	<0.001
	Highly populated sites			
Global scale	144	−0.41	0.52	<0.001
15°S–15°N	27	−0.98	0.84	<0.001
10°N–40°N	37	−1.25	0.68	<0.001
40°N–70°N	84	−0.19	0.27	<0.010
	Sparsely populated sites			
Global scale	174	−0.16	0.18	<0.040
15°S–15°N	21	0.58	0.58	<0.001
10°N–40°N	31	−0.18	0.05	Not significant
40°N–70°N	117	−0.27	0.35	<0.002

^aThe goodness-of-fit measure (R²) and the significance level (p), which are also displayed, characterize how linear trends fit to the long-term variations.

[20] The inhabited areas occupy only a small part of the total land area (estimated 10–20%). As illustrated in Figure 3, even over Europe, with its relatively large industrial activity, the urban aerosol-clouds are clearly seen. Therefore, these findings suggest that “global dimming” is essentially a local phenomenon, observed only on a limited part of the total land area. Particularly in the early stage of the observational records (the 1960s–1970s), there seems to be clear evidence for an urbanization effect (or a local effect of dimming), while probably not so much later on. Note that even for sparsely populated sites (<0.1 million) there is some population/urbanization effect on sunlight availability (a decline of 0.16 W/m²/yr), which was difficult to separate since their population figures were not available. However, most of the land areas throughout the globe and certainly oceans have zero population. It is worth referring here to *Pinker et al.* [2005] who found persistent increase in surface solar radiation over the ocean, by using satellite data. Hence, the obtained change in the radiation trends with population seems to be an important indicator suggesting that solar dimming as a global phenomenon is questionable.

Evidence for Global Warming





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U. S. DEPARTMENT OF ENERGY

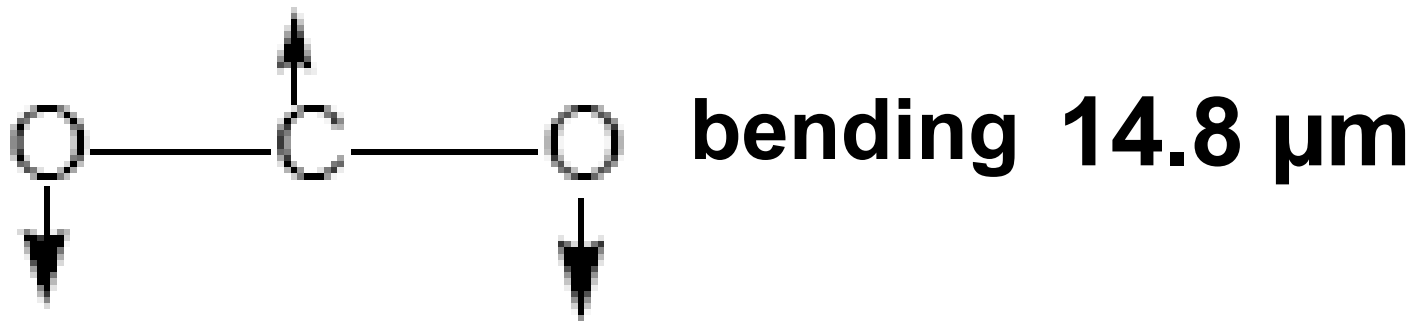
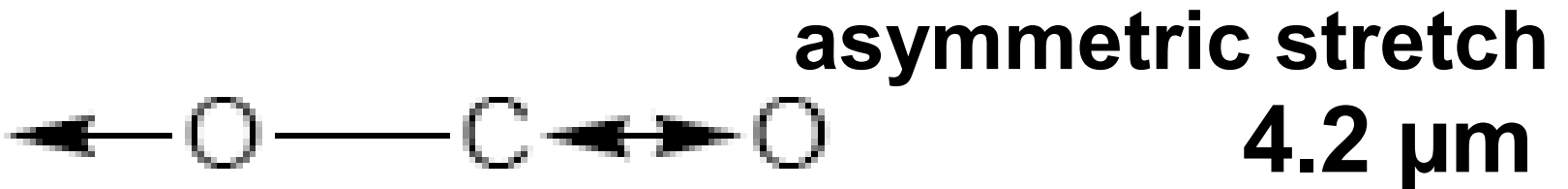
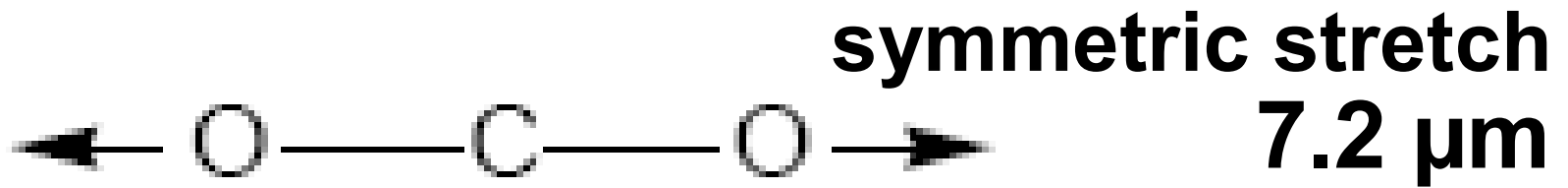


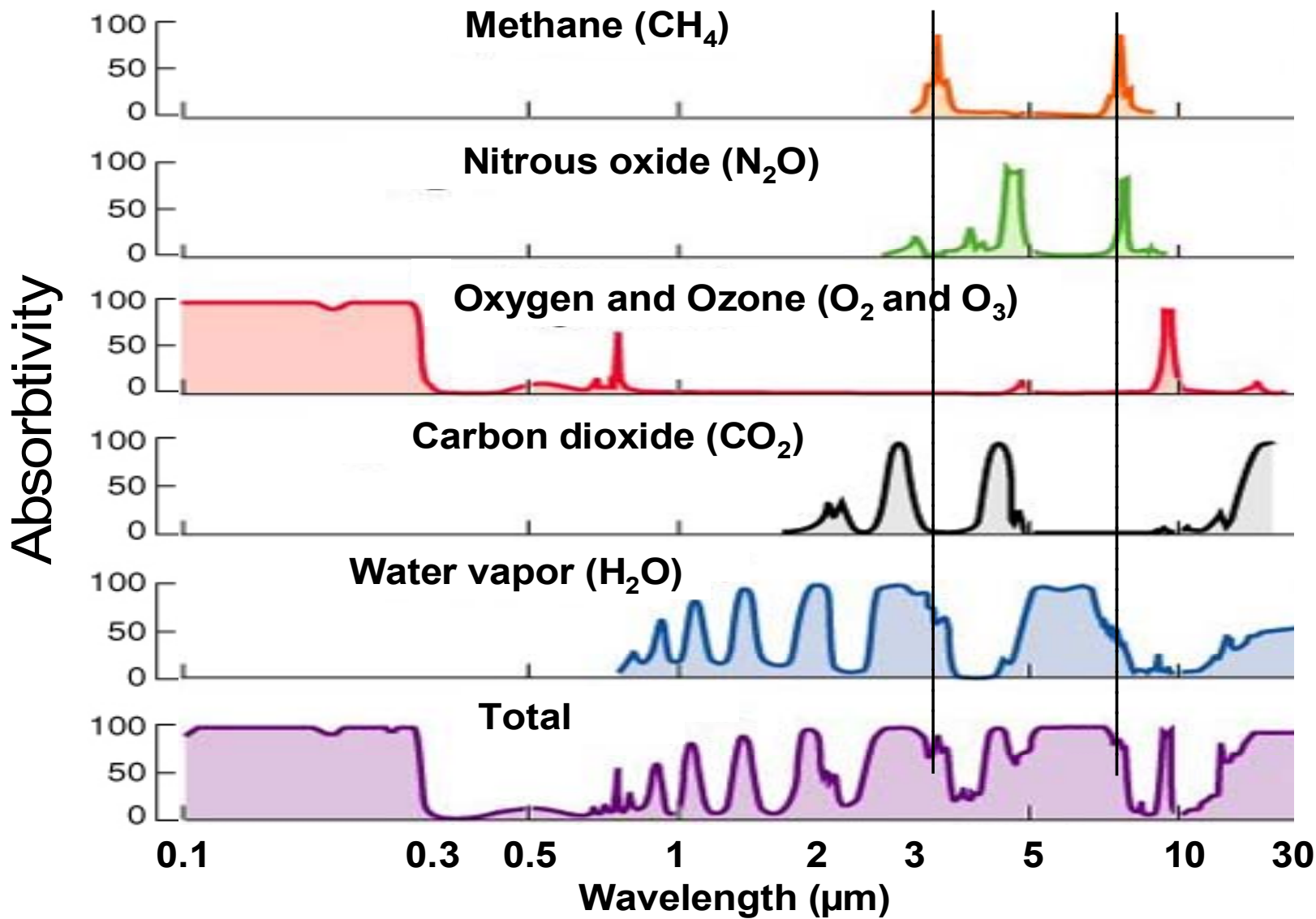
2. Of the more than 29,000 observational data series¹, from 75 studies, that show significant change in many physical and biological systems, more than 89% are consistent with the direction of change expected as a response to warming. (Figure SPM-1) [1.4]

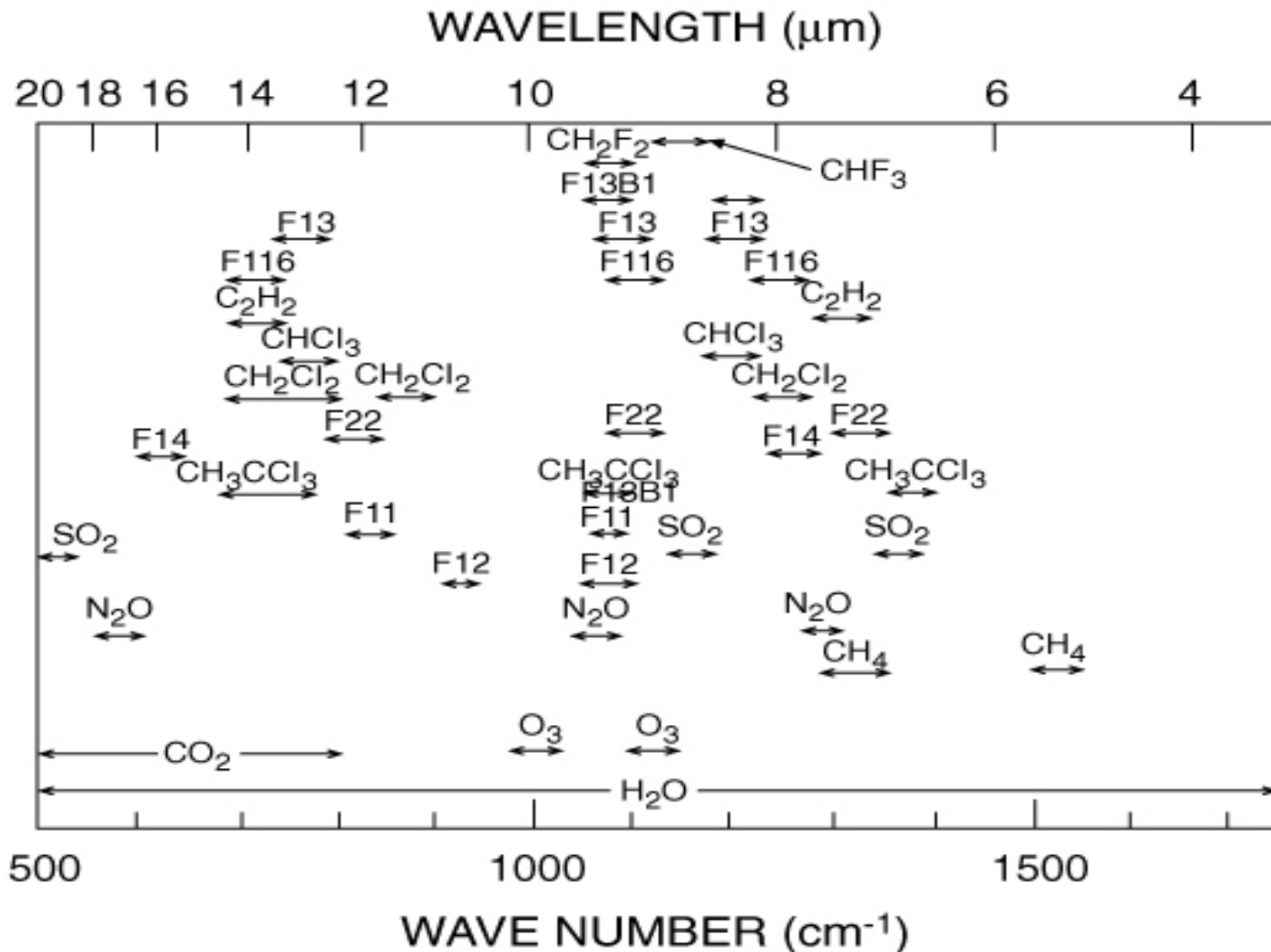
⁵ Measured by the Normalised Difference Vegetation Index, which is a relative measure of the amount of green vegetation in an area based on satellite images.

⁶ See Endbox 2.

⁷ A subset of about 29,000 data series was selected from about 80,000 data series from 577 studies. These met the following criteria: (1) Ending in 1990 or later; (2) spanning a period of at least 20 years; and (3) showing a significant change in either direction, as assessed in individual studies.



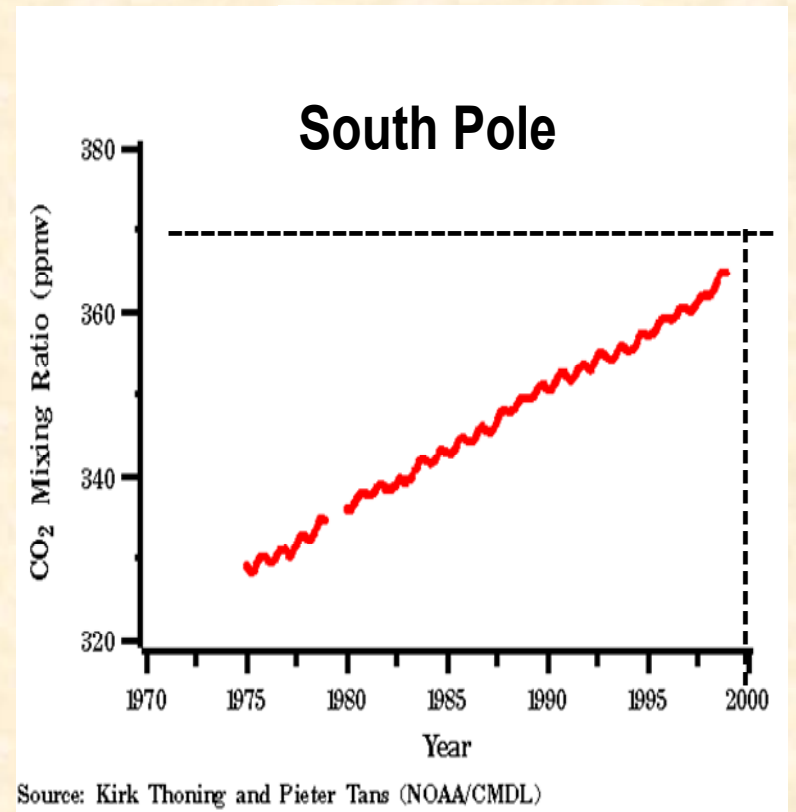
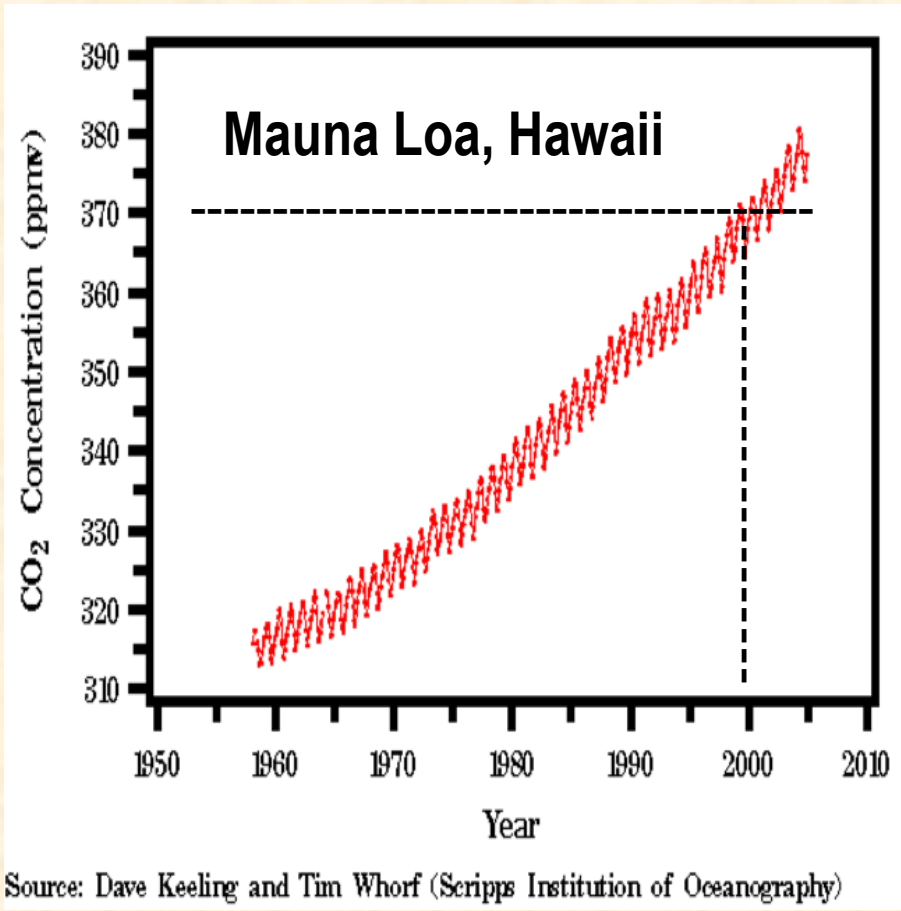


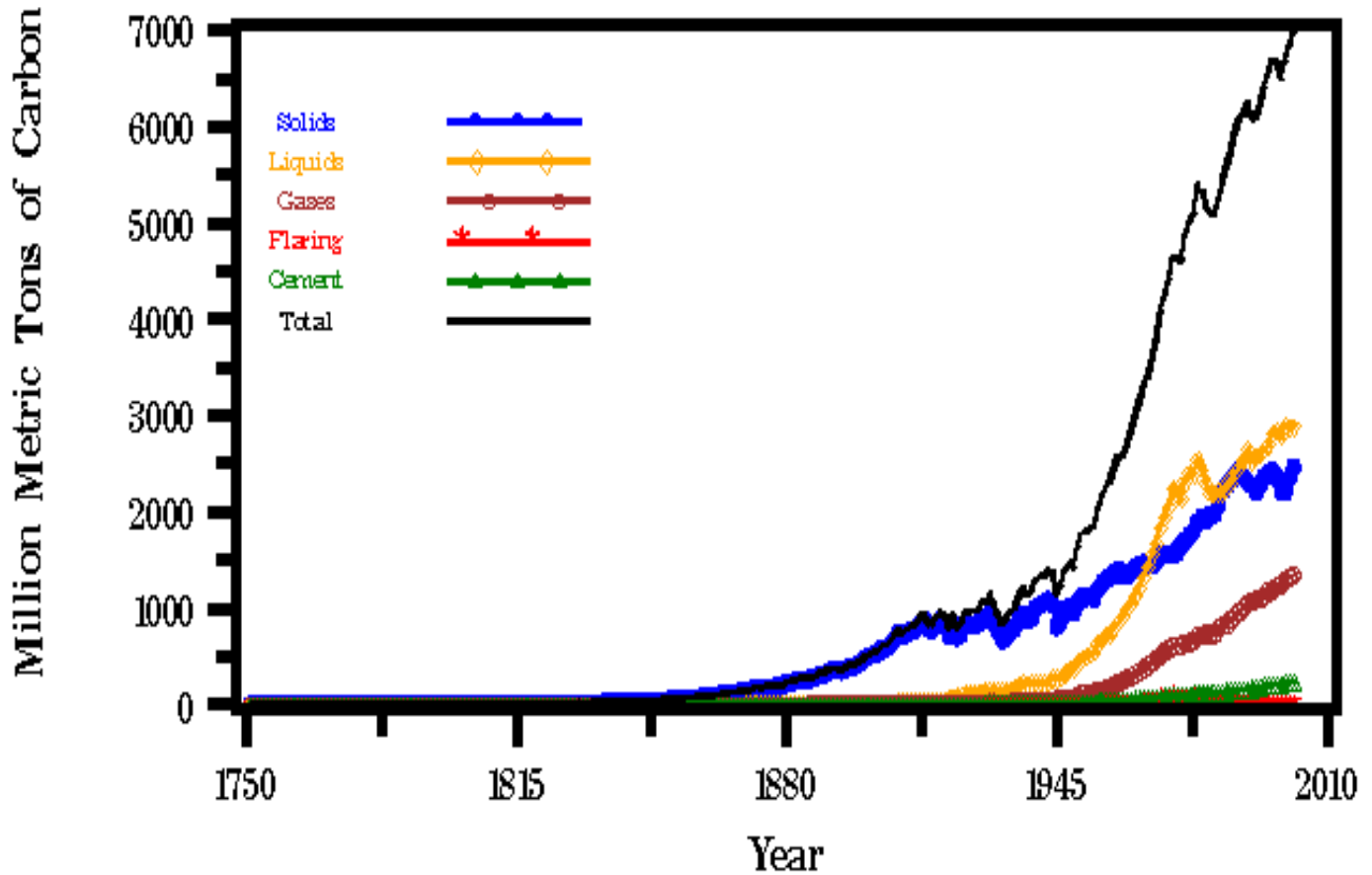


© 1986 World Meteorological Organization

Figure 2. Spectral locations of the absorption features of several atmospheric gases (WMO, 1986).
 From: **Atmospheric Chemistry and Global Change**, by Guy P. Brasseur; John J. Orlando, and Geoffrey S. Tyndall, Oxford University Press, 1999.

CO₂ concentrations are increasing





Global CO₂ emissions from fossil fuel burning, cement production, and gas flaring for 1751-2002. Source Marland et al, -- CDIAC website

H1: Exaggeration from the very beginning

The anthropogenic emissions of carbon dioxide will certainly increase during the following years, but due to limited reserves of fossil fuel, no rapid increase in the long run is possible. The often cited IPCC scenario IS92a seems unrealistic because all known and hypothetical reserves of about **1500 GtC** fossil fuel would have been used during the next century.

Facts:

- 1 **1500 GtC** \ll 700 ppmv CO₂
- 2 Resources (not reserves) are variously estimated between 5000 & 5500 Gt-C
- 3 So far, about half the emitted carbon has remained in the atmosphere.

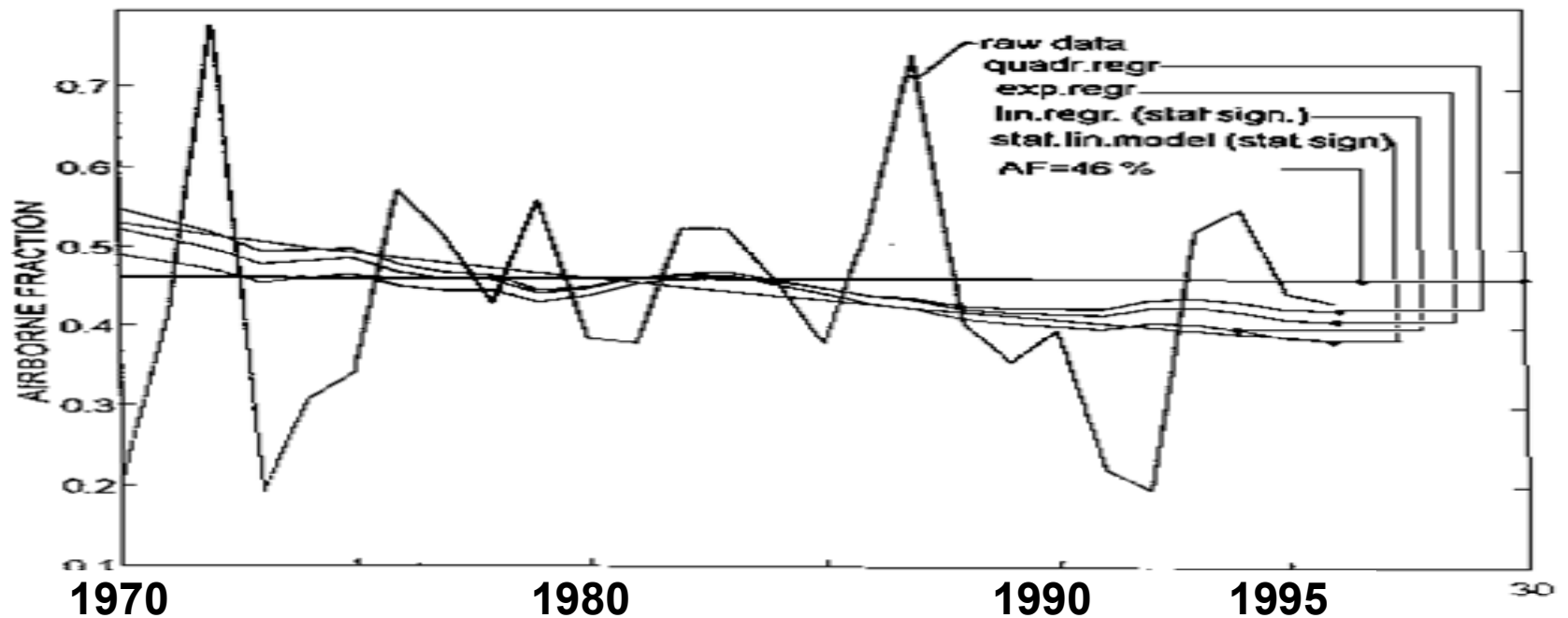


Figure 5. Airborne fraction calculated in different ways

In fact, the mean value of AF has been a little lower than 50 %, it has been about 46 % during the period 1970-1997, see *Figure 5*.

H2: IPCC predictions

The airborne fraction is decreasing.

The calculations above clearly show that the hypothesis **H2** should be rejected due to lack of experimental confirmation. The atmospheric concentration of carbon dioxide will continue to increase due to anthropogenic emissions, but the rate of increase will be moderate.

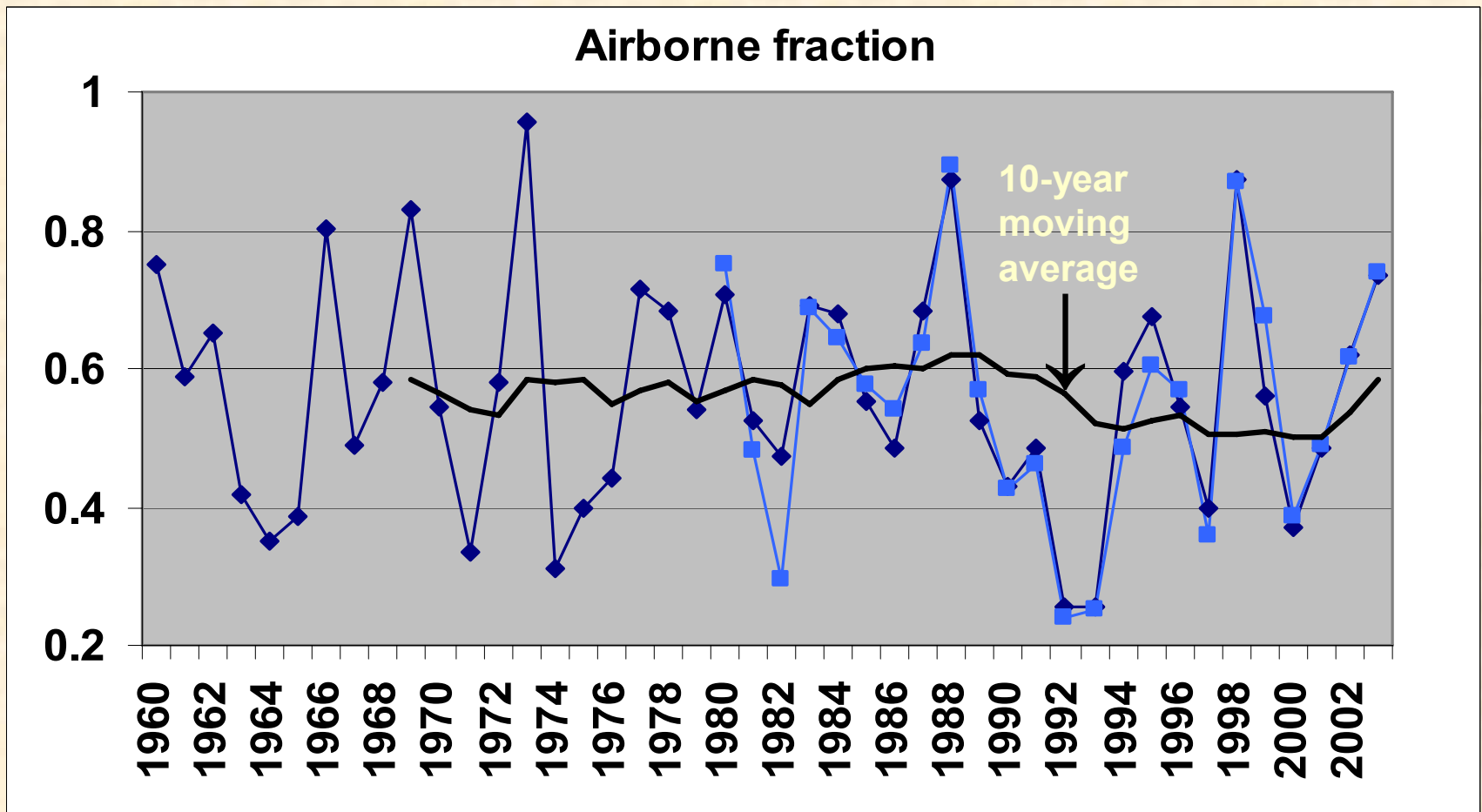
<http://www.john-daly.com/ipcc-co2/ipcc-co2.htm>

THE DISCOVERY TWINS



MUELLER

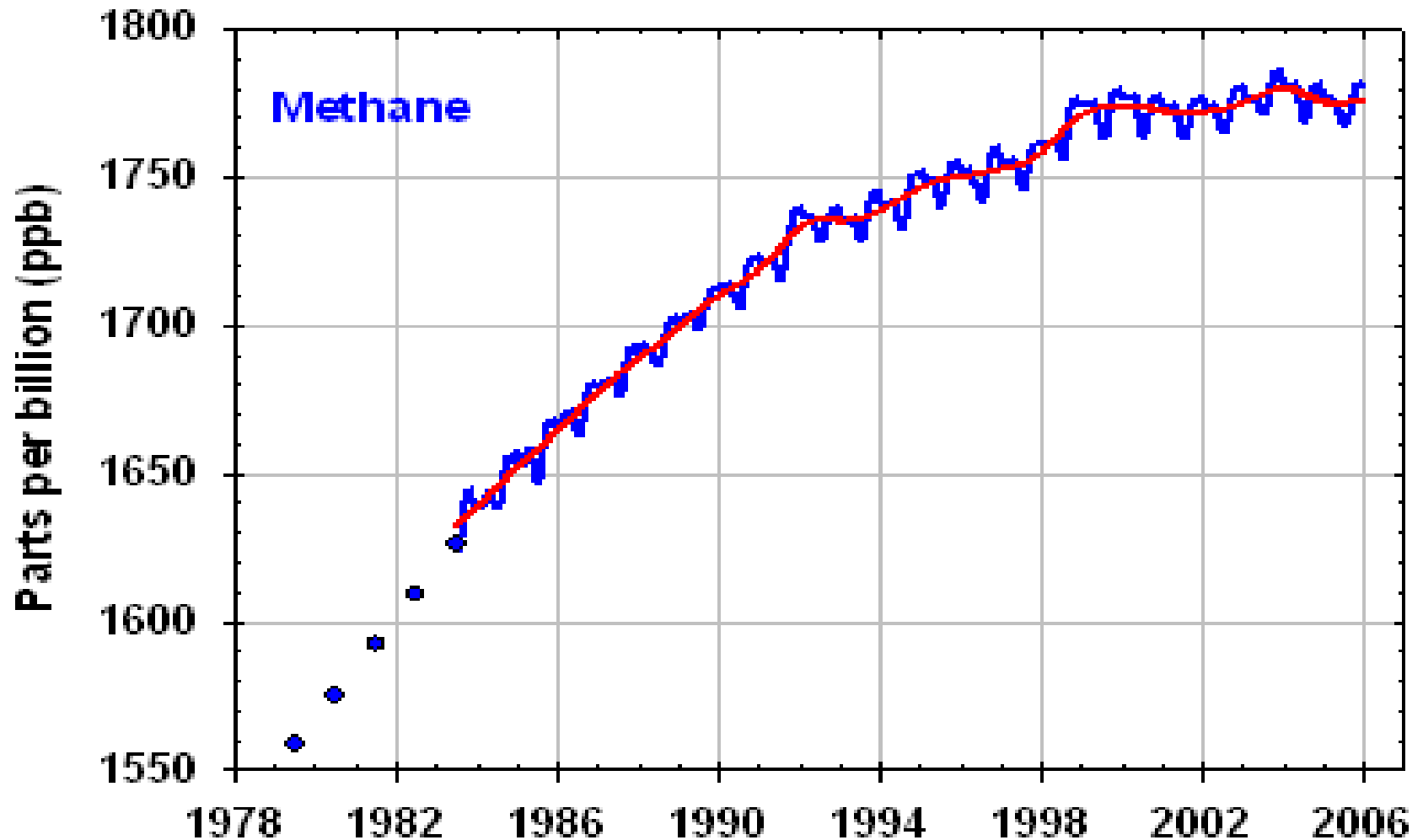
Airborne fraction of fossil-fuel emissions only



Using Mauna Loa Data —◆—

Using global averages —■—

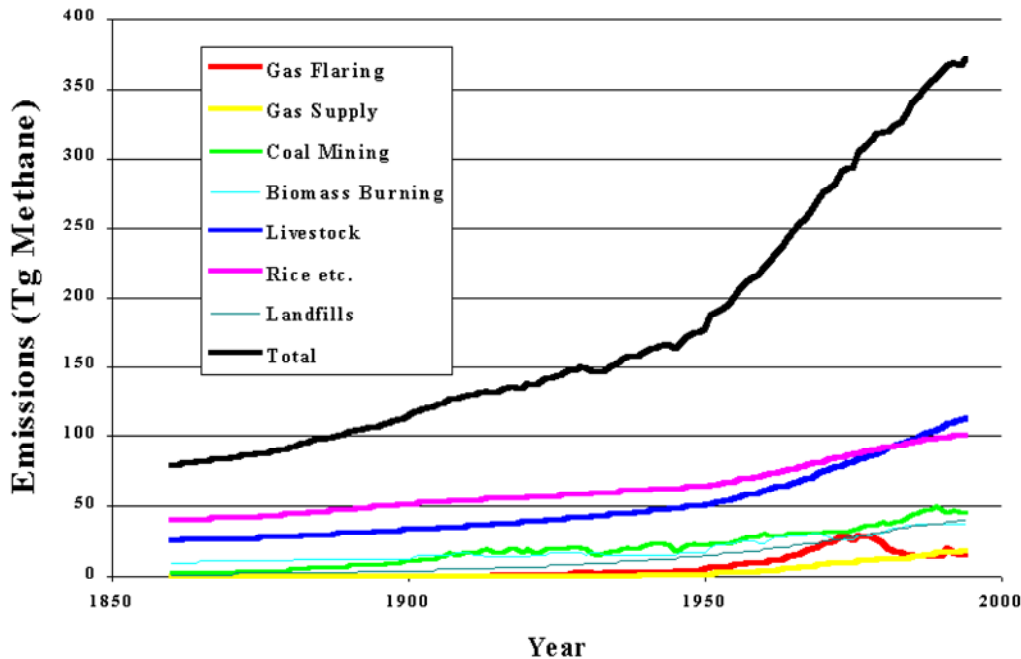
Methane concentrations *have increased*



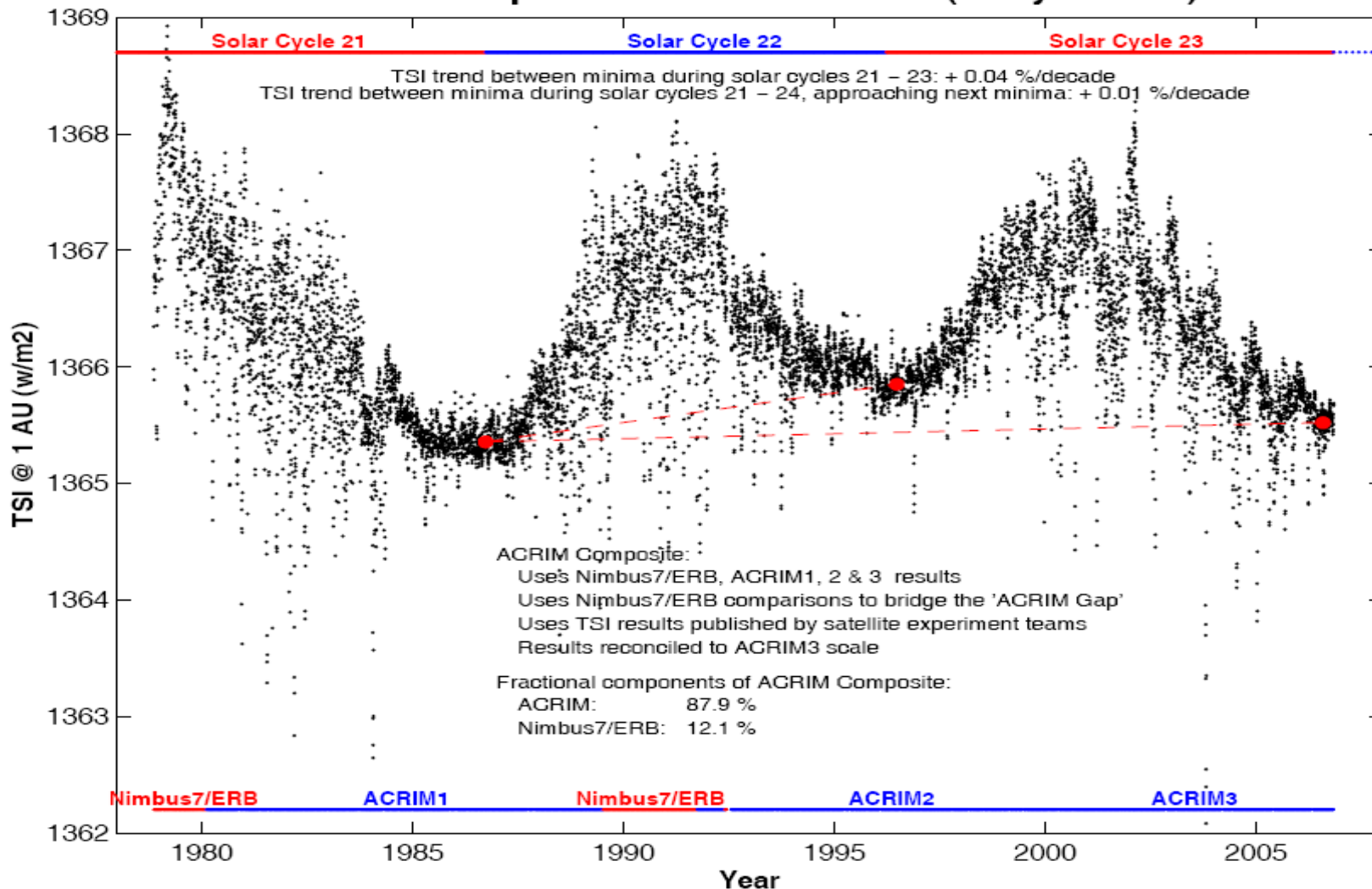
And humans are responsible for at least some of the methane increase.

Methane emissions have increased

Global Anthropogenic Methane Emissions: 1860-1994
(Stern & Kaufmann)

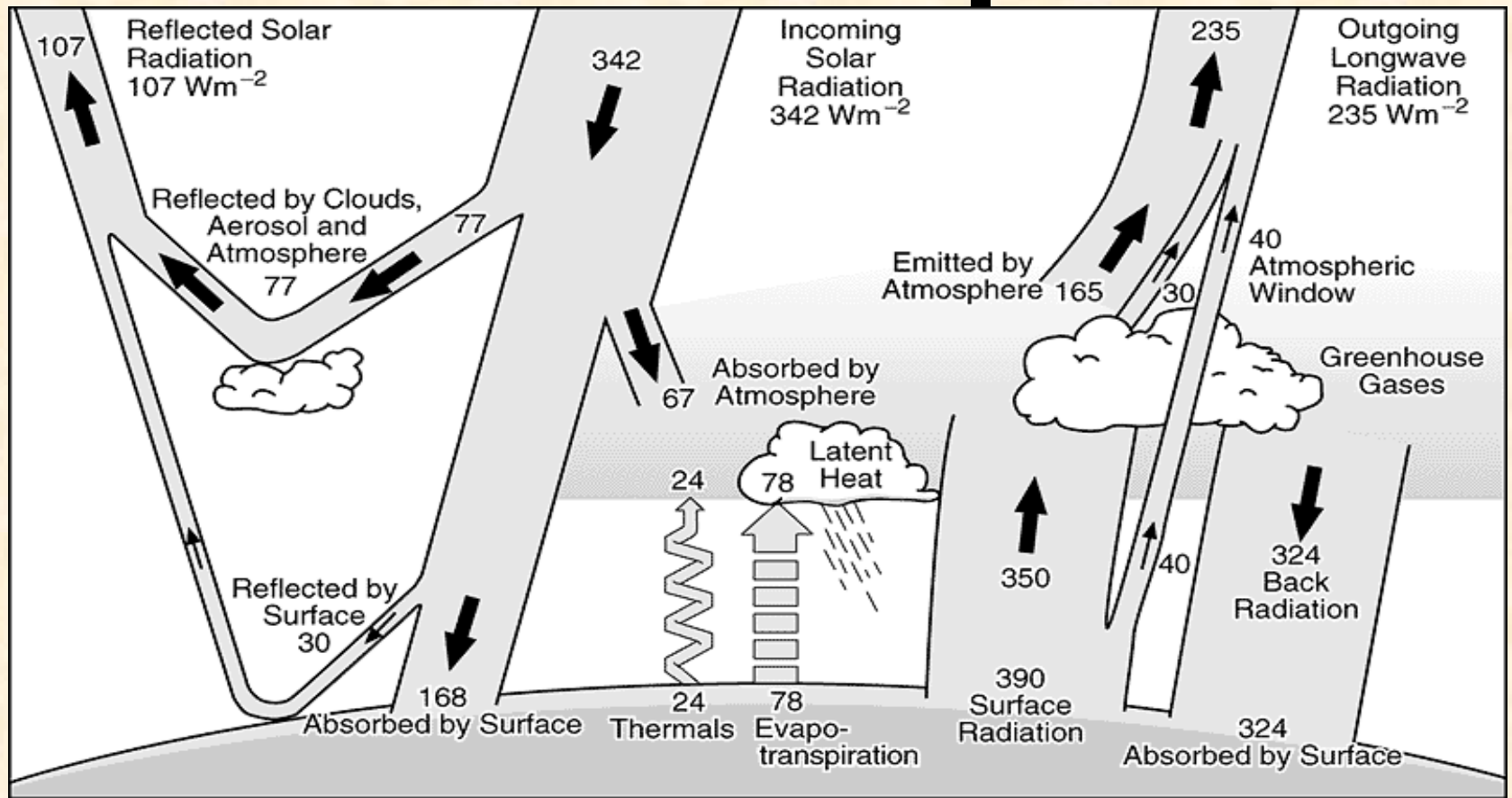


ACRIM Composite TSI Time Series (Daily Means) *



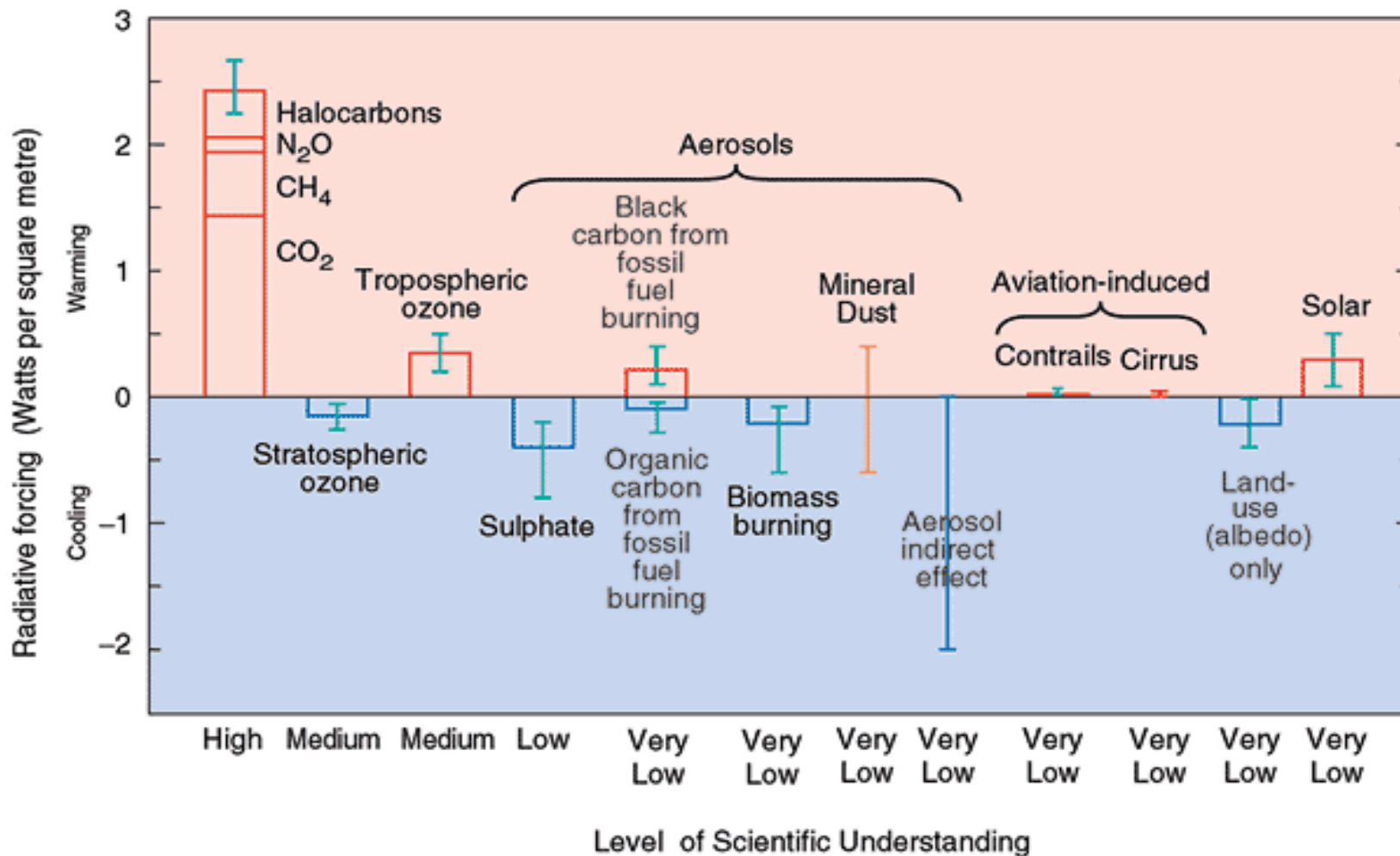
* Willson & Mordvinov, GRL, 2003 RC Willson, earth_obs_fig26 12/03/2006

$$\frac{\pi r^2}{4\pi r^2} = \frac{1}{4}$$

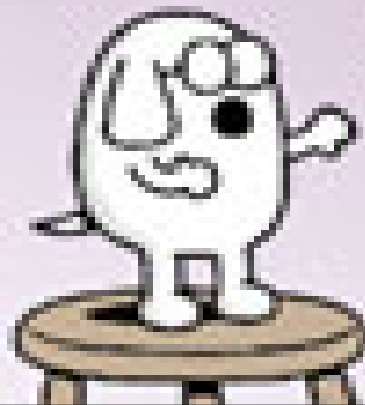


IPCC, 2001 – Radiative forcing increases since 1750

The global mean radiative forcing of the climate system for the year 2000, relative to 1750



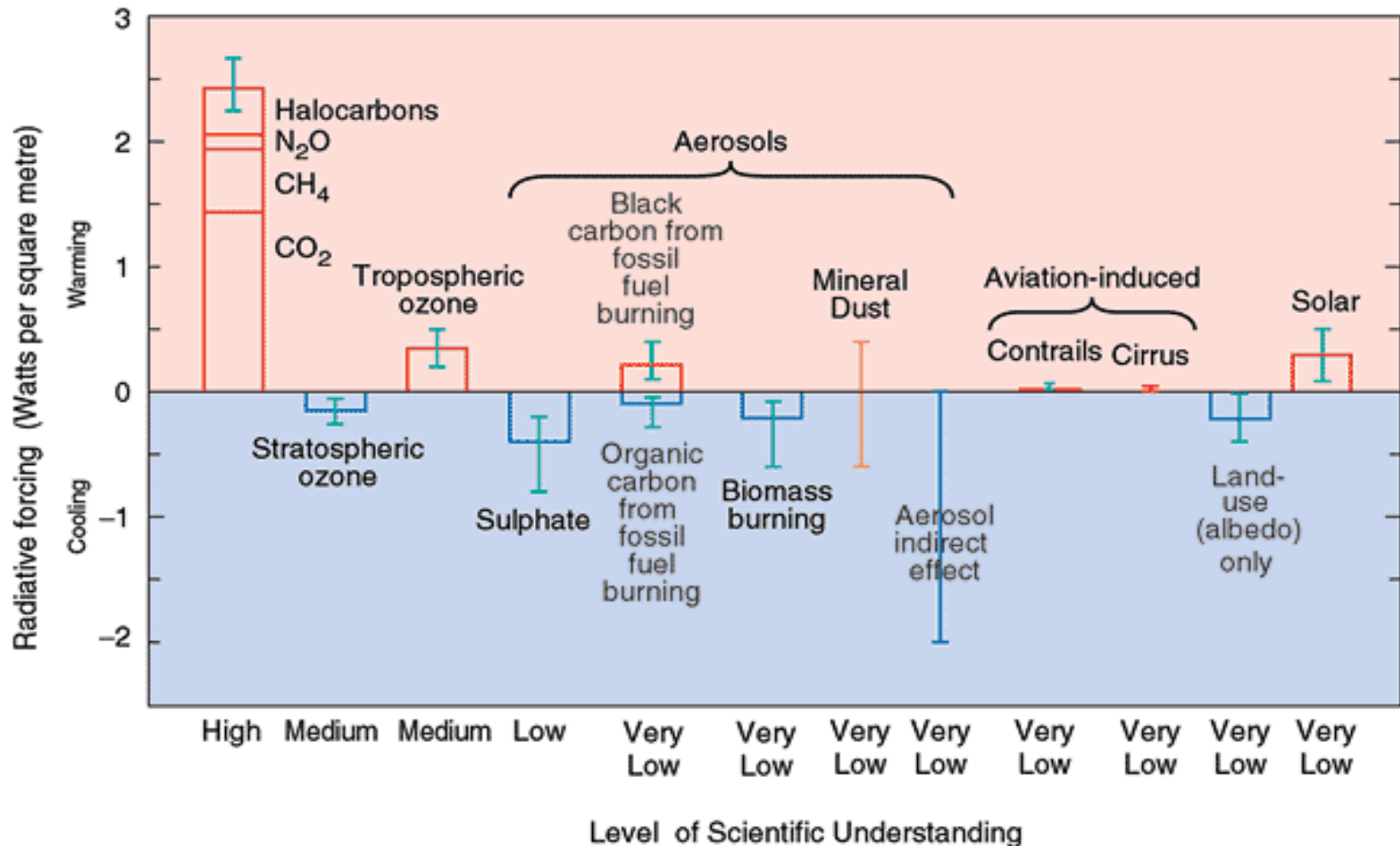
**Next week a doctor with
a flashlight will show
you where our sales
projections come from.**



Thanks to Scott Adams

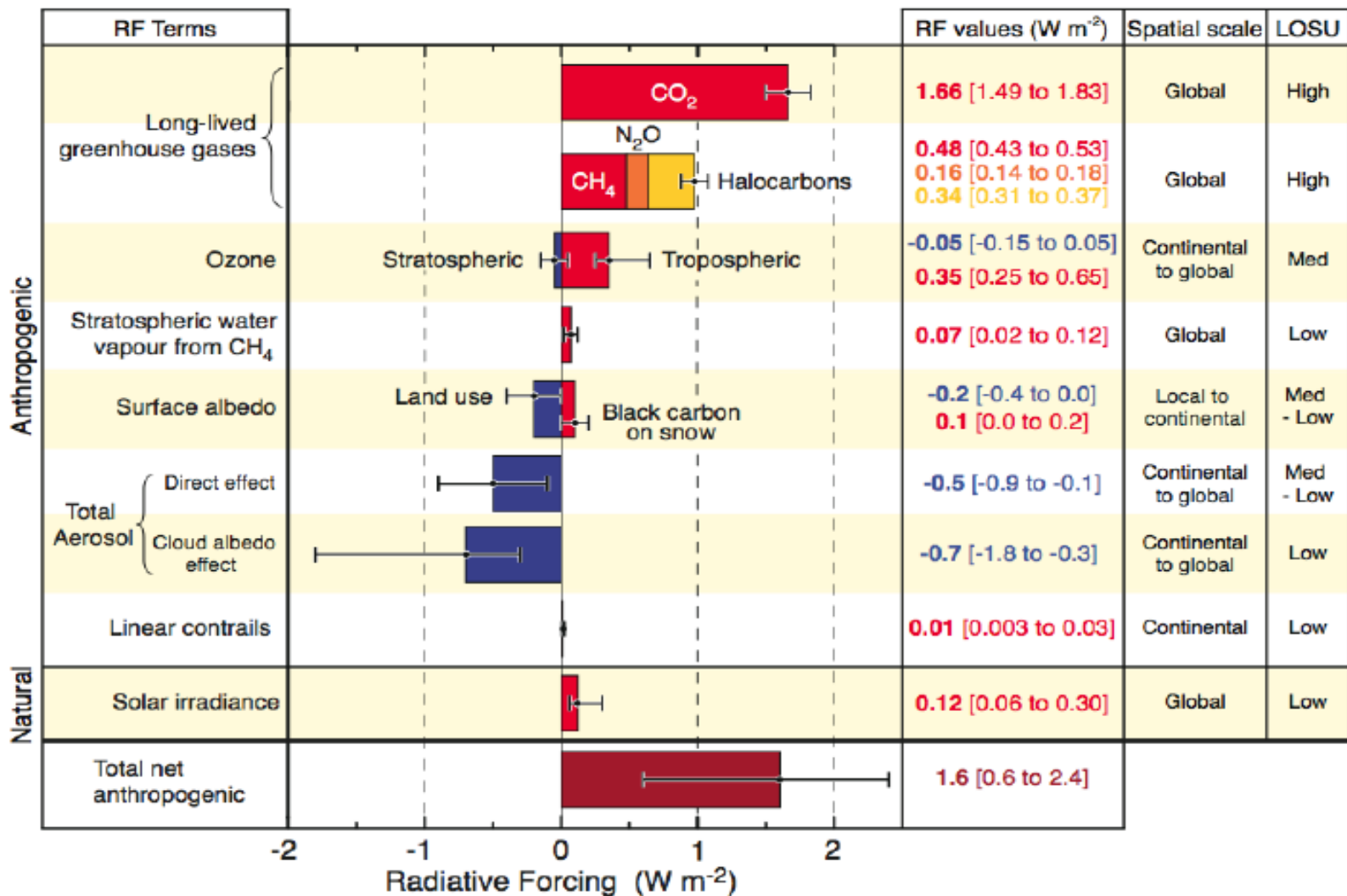
IPCC, 2001 – Radiative forcing increases since 1750

The global mean radiative forcing of the climate system for the year 2000, relative to 1750



IPCC, 2007 – Radiative forcing increases since 1750

Radiative Forcing Components



A scenic landscape at sunset or sunrise. The sky is a mix of blue, green, and yellow, with a bright sun low on the horizon. Below the horizon, a sea of white clouds fills the valley. In the foreground, dark, silhouetted mountains rise against the light. The overall mood is peaceful and serene.

The End

Thank you for your attention.

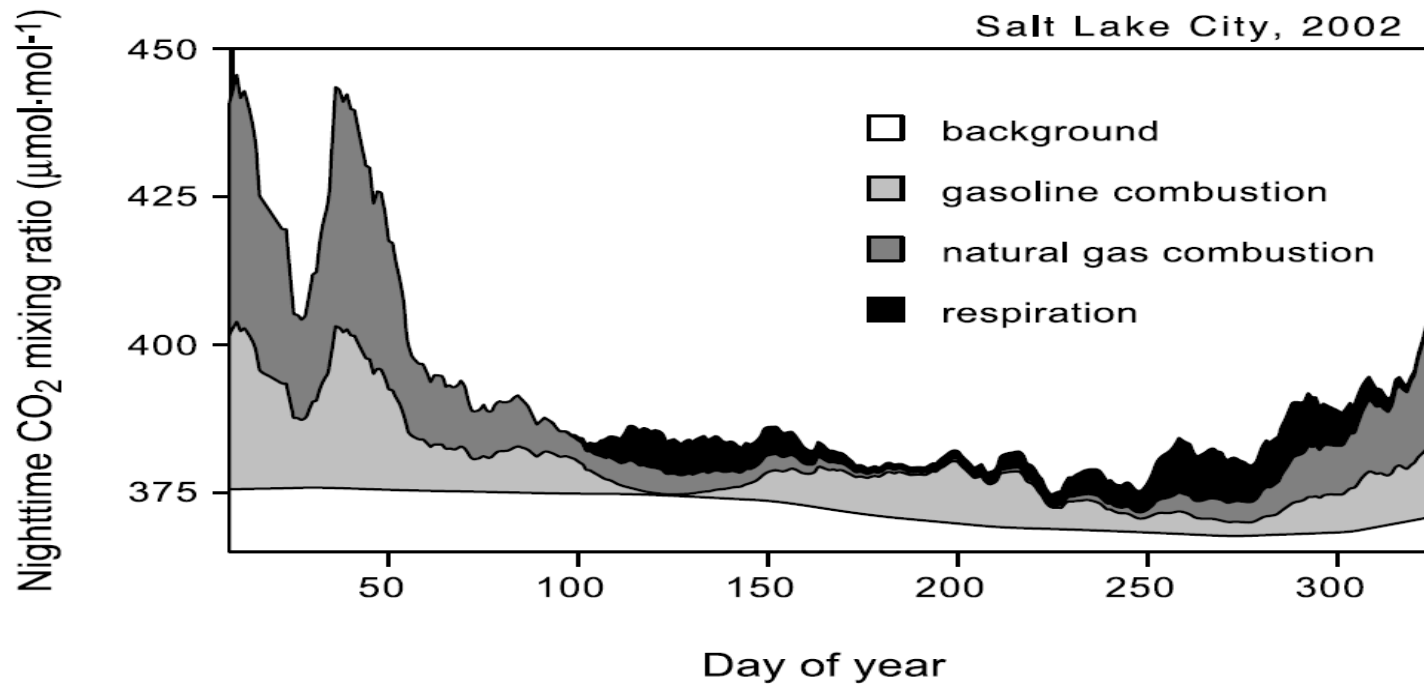


Figure 5. Components of the nighttime CO₂ mixing ratio, smoothed with a 10-day running average. The annual cycle of background CO₂ mixing ratio was estimated from monthly measurements in 2001 by the U.S. NOAA CMDL Carbon Cycle Group at the Wendover, Utah, flask network station. Contributions from gasoline combustion, natural gas combustion, and respiration were calculated from local CO₂ mixing ratio measurements and equations (4)–(6).

Natural CO₂ “capture and sequestration”:

