

The Sun Also Warms

Willie Soon¹

Independent Scientist

April 10, 2019

Friends of Science Society 16th Annual Meeting/Event
Calgary, Canada

¹All Views Expressed Are Strictly My Own and Should Be Yours Too

Flashback 1972 – David Suzuki: Humans are just “maggots” that “defecate all over the environment”

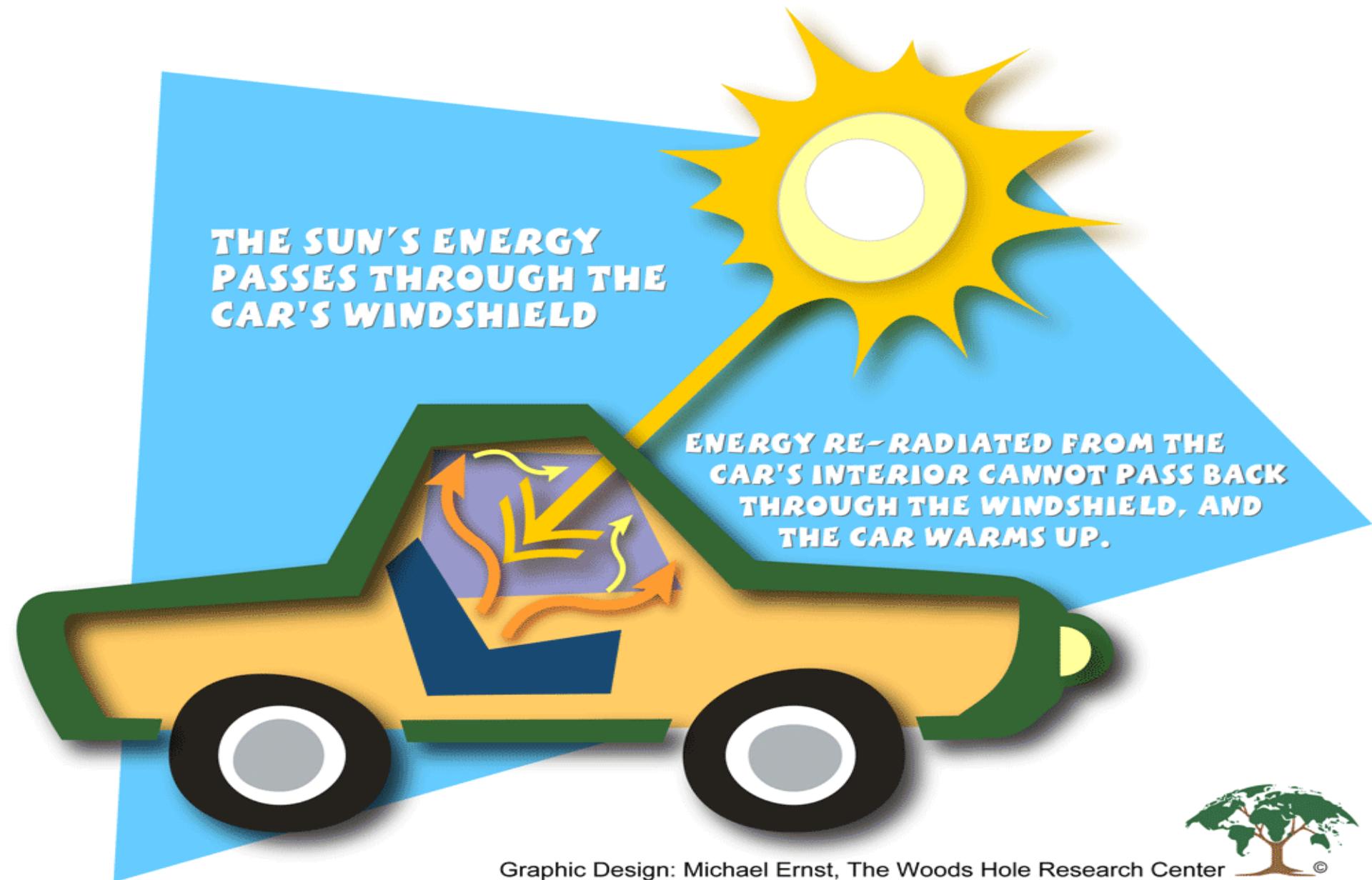
1972 clip of David Suzuki compar...



Watch later



David Suzuki's own private "Greenhouse Effect"



Demonizing the Carbon Atom

"We are familiar with this effect in a car that has sat in the sun. The interior becomes hot because the carbon in the glass keeps the heat in."

Courtesy of Professor Chris Essex
of the University of Western Ontario

ENVIRONMENT

Balance the books on global warming

When scientists estimate the dangers of the greenhouse effect, they could take a lesson from accountants.

SCIENCE is a powerful way of knowing. It is based on the replacement of subjective, emotional experience with objective observation free of distortions of personality and replicable anywhere and any time.

The environmental crisis has put scientists in a quandary because degradation of the planet and its consequences cannot be accurately anticipated or even verified.

Take the issue of global warming.

It has been known since the last century that carbon-bearing compounds are transparent to sunlight but opaque to infrared. In other words, sunlight passes through carbon-containing air, whereas infrared heat rays tend to be reflected by the carbon.

We are familiar with this effect in a car that has sat in the sun. The interior becomes hot because the carbon in the glass keeps the heat in. This is the basis for predicting "greenhouse" effects of atmospheric compounds like carbon dioxide and methane.

Since the industrial revolution, human activity has been putting more carbon-based compounds into the atmosphere than can be removed naturally. As well, novel chemicals such as chlorofluorocar-

bonic acid and methyl chloroform are increasing the concentration of greenhouse gases in the atmosphere.

But now, a small group of scientists claims their computer models show the warming will stop and may even be followed by a cooling.

The prediction is based on greater evaporation to form clouds that will spread laterally and shield the planet from sunlight. But it is just as possible clouds will be swept up into vertical columns instead of lateral sheets and thus accelerate the warming process.

Nevertheless, because some models predict there is no threat of global warming, U.S. President George Bush has been convinced that there should not be any international targets set for reducing carbon emissions until scientists have a better idea of what is going to happen.

But that could take decades, if ever, and those countries that are anxious to cut emissions are not willing to do so unilaterally because the added costs will increase the price of their goods.

We don't know enough about the properties of the planet and its atmosphere to predict weather from day to day, so it's no surprise that models of global climate yield such disparate results.

What we do know is that we are adding unprecedented amounts of greenhouse gases to the upper atmosphere and there will be effects even though we can't accurately predict what they will be.

We should follow the example of accountants. In making financial

OPINION



**DAVID
SUZUKI**

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"We'll Always Be Your Sugar!"

SUGAR

PREMIUM
PURE CANE
GRANULATED

NOW!



Carbonfund.org

See side panel for details.

NET WT 5 LB (2.26kg)

WE CAN TAX THE AIR..



AND TELL THEM WE'RE
SAVING THE PLANET, HA
HA HA.

JUSTIN TRUDEAU BOT



Protest in DC June 15, 2015 (E&E news; Gayathri Vaidymathan)

Be very careful about giving a stupid guy enough rope to hang himself. You might end up strangling him with it.



Climate change denial

A REPUBLICAN SCIENCE DENIER ARGUING WITH A REAL SCIENTIST

Will hang himself with his own words.

The residential palace of Willie Soon (in a secret location)



Willie Soon's home toilet



What truly matters in science: Seeking Truth



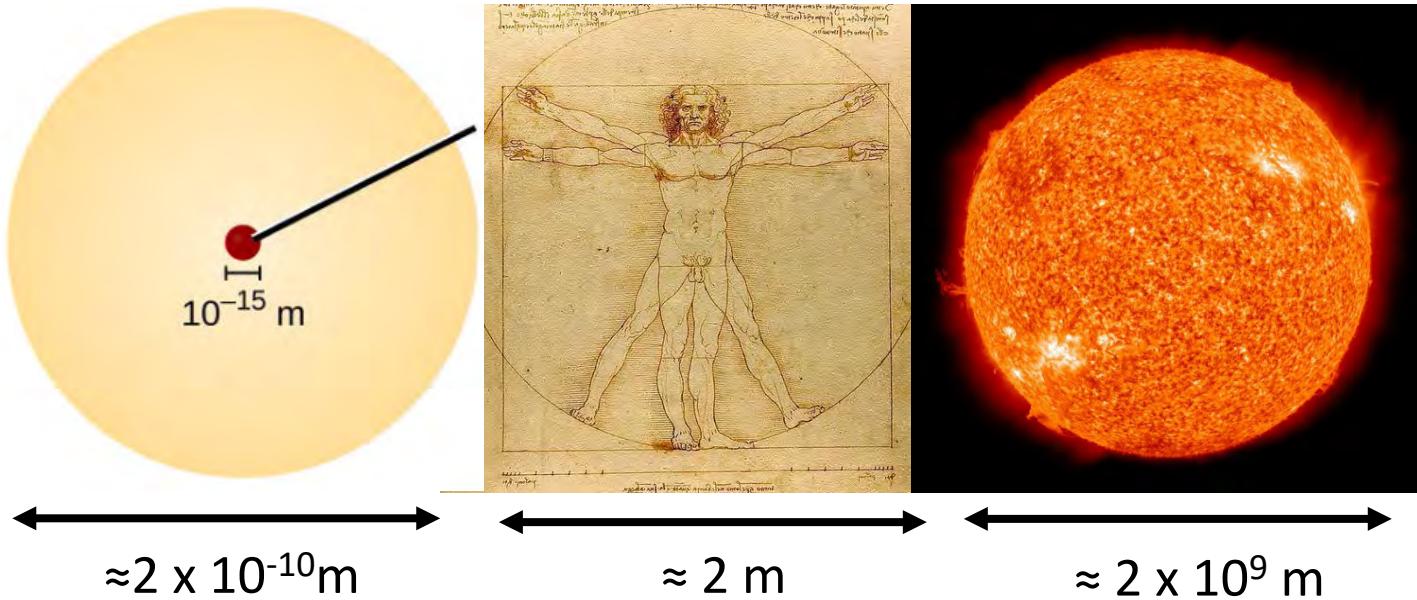
Soon also has fans among scientists who tend to share his views.

Freeman Dyson, a respected figure at the Institute for Advanced Study, in Princeton, whose turn in recent years toward climate skepticism stunned many of his peers, defended Soon's work.

“The whole point of science is to question accepted dogmas,” Dyson said in an e-mail to the Globe. **“For that reason, I respect Willie Soon as a good scientist and a courageous citizen.”**

(Boston Globe, November 5, 2013)

“WHAT IS MAN THAT THOU ART MINDFUL OF HIM”



Source: Arthur Eddington's Stars and Atoms (1927)



I am no poet, but if you think for yourselves, as I proceed, the facts will form a poem in your minds.

~ Michael Faraday

“The people who are supposed to be the experts and who claim to understand the science are precisely the people who are blind to the evidence...I hope that a few of them will make the effort to examine the evidence in detail and see how it contradicts the prevailing dogma, but I know that the majority will remain blind. That to me is the central mystery of climate science. It is not a scientific mystery but a human mystery. How does it happen that the whole generation of scientific experts is blind to obvious facts?”

– Freeman Dyson, foreword in a GWPF report on
“Carbon Dioxide: The Good News” by Indur Goklany (2015)



99% confident that the warming was caused by CO₂

"All the News
That's Fit to Print"

The New York Times

VOL. CXXXVII... No. 47,546

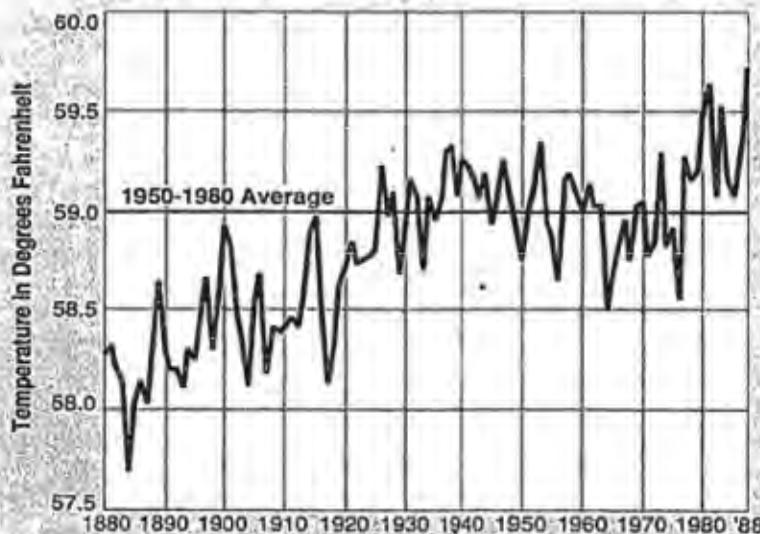
Copyright © 1988 The New York Times

NEW YORK, FRIDAY, JUNE 24, 1988

50 years ago today (2008) from New York City:
Forecast on Long Island

30 CENTS

Global Warming Has Begun, Expert Tells Senate



Global Warming: Greenhouse Effect?

Average global temperatures through the first five months of 1988. As a baseline, scientists use the global average from 1950 to 1980.

Source: James E. Hansen and Sergej Lebedoff

The New York Times / June 24, 1988

An Impact Lasting Centuries

Dr. Hansen, a leading expert on climate change, said in an interview that there was no "magic number" that showed when the greenhouse effect was actually starting to cause changes in climate and weather. But he added, "It is time to stop waffling so much and say that the evidence is pretty strong that the greenhouse effect is here."

If Dr. Hansen and other scientists are correct, then humans, by burning of fossil fuels and other activities, have altered the global climate in a manner that will affect life on earth for centuries to come.

Dr. Hansen, director of NASA's Institute for Space Studies in Manhattan, testified before the Senate Energy and Natural Resources Committee.

Some Dispute Link

He and other scientists testifying before the Senate panel today said that projections of the climate change that is now apparently occurring mean that the Southeastern and Midwestern sections of the United States will be subject to frequent episodes of very high temperatures and drought in the next decade and beyond. But they cautioned that it was not possible to attribute a specific heat wave to the greenhouse effect, given the still limited state of

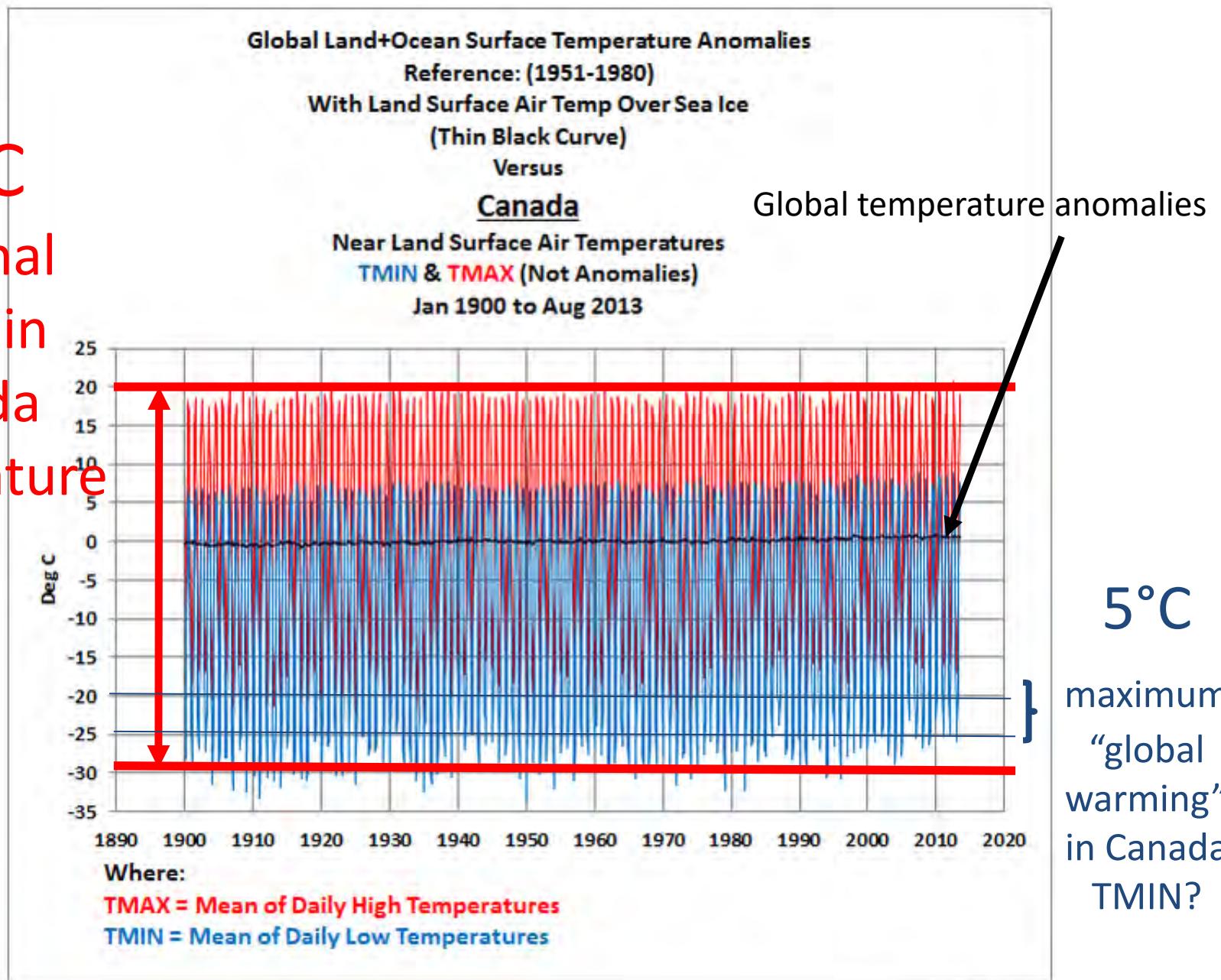
Continued on Page A14, Column 3

By 1988, climate change was a well-established scientific fact, and widely acknowledged in the public sphere, as exemplified by this front-page story in The New York Times reporting on Dr. James Hansen's testimony before Congress.

100% confident that it is impossible to find CO₂ in Canadian Records

50°C
seasonal
range in
Canada

Temperature





The diameter of the Sun is 109 times that of the Earth

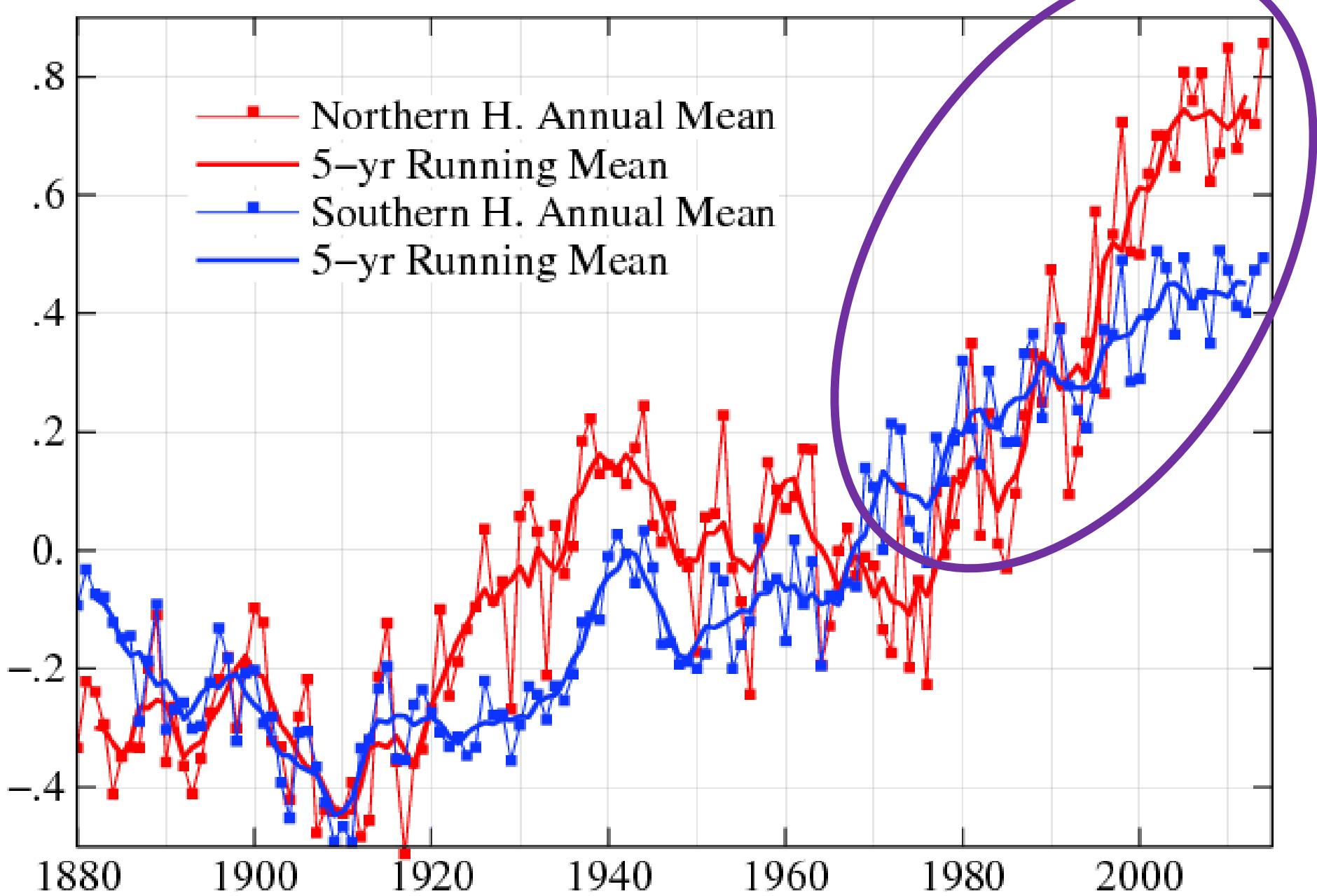




New and exciting results from Ronan and Michael Connolly

[Soon, Connolly, Connolly 2015, ESR]

Hemispheric Temperature Change

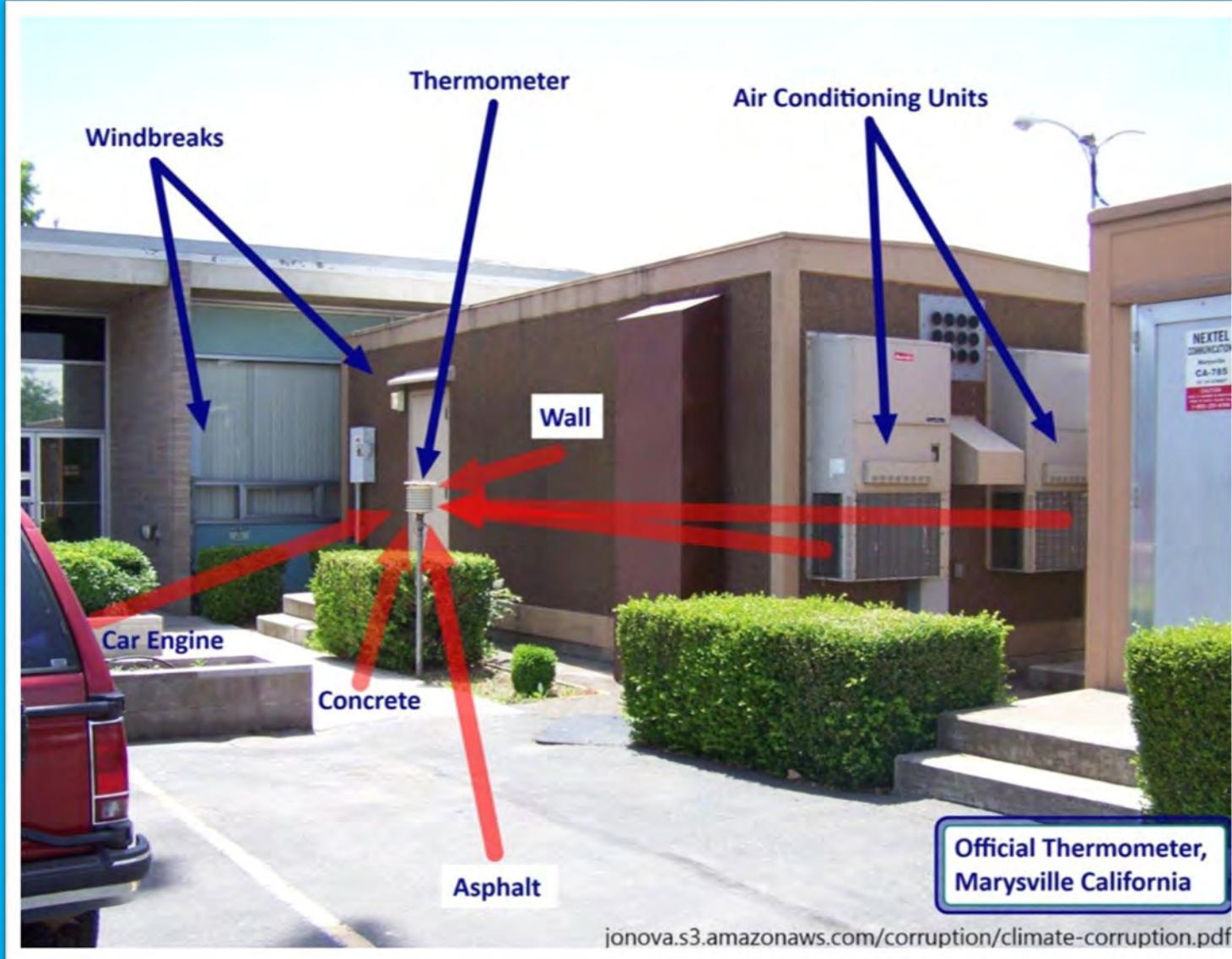




Is this the

Mother of all Scares?

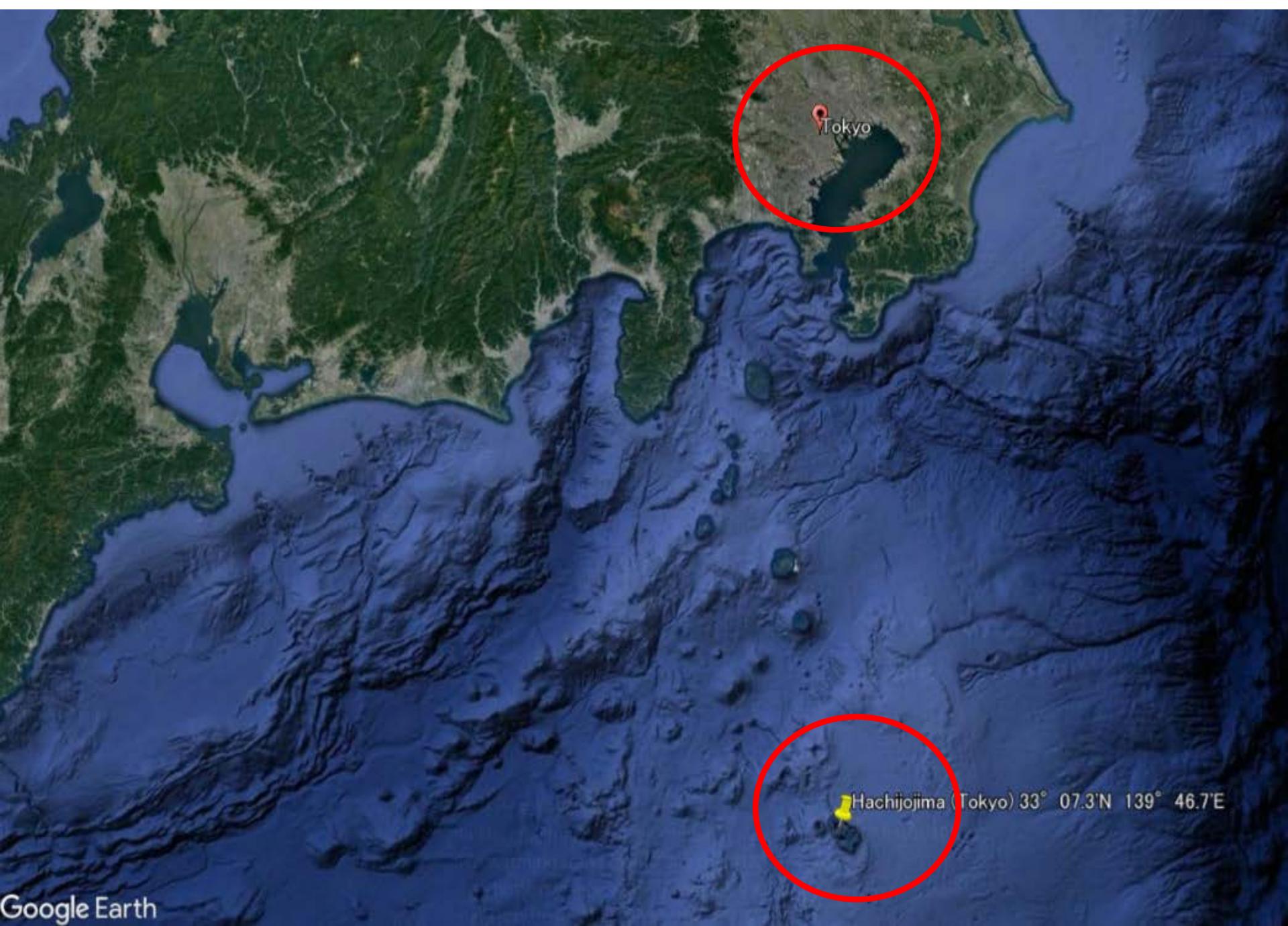
Marysville California



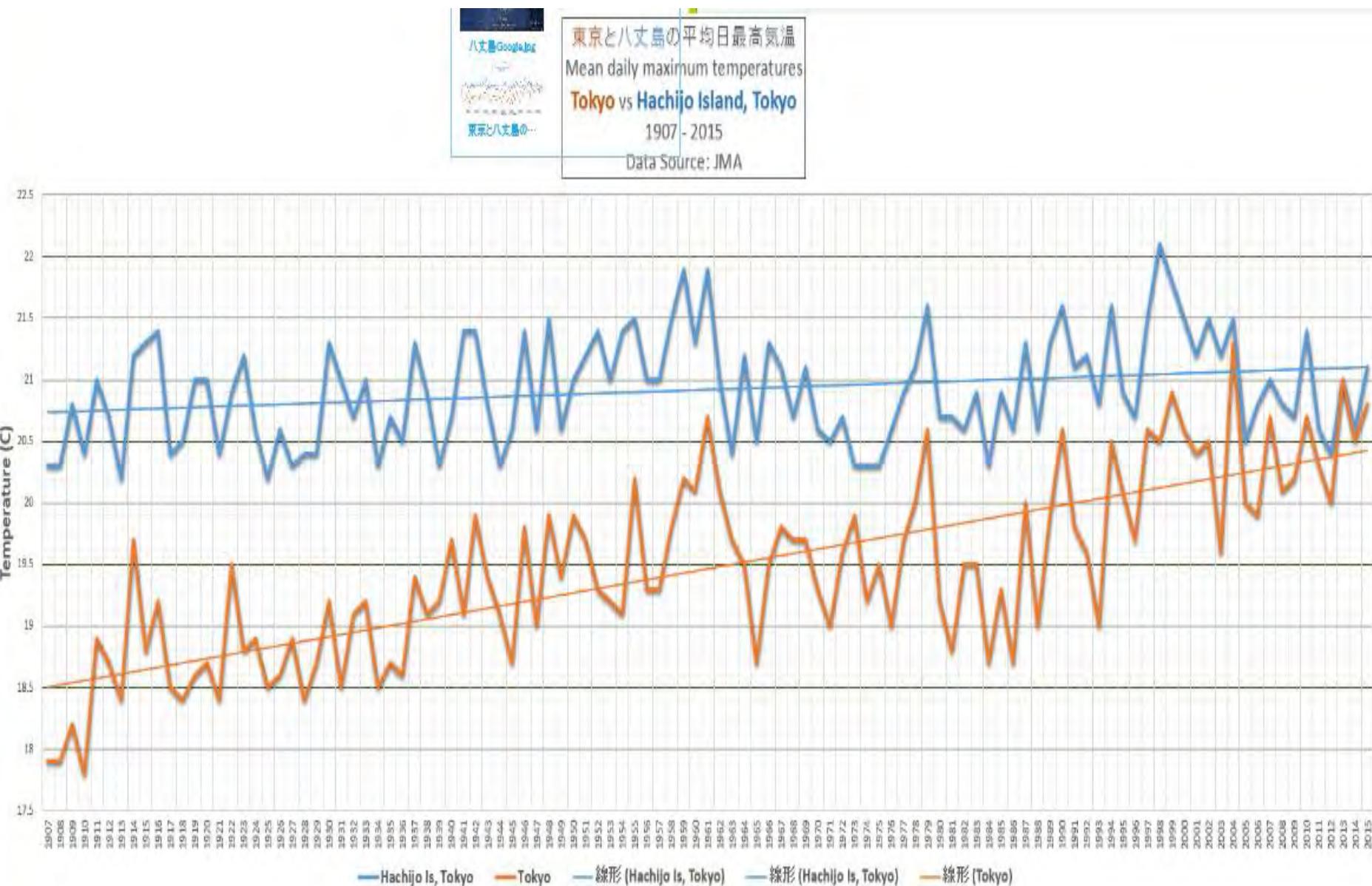
Now dropped, but data back to 1897 still in official record

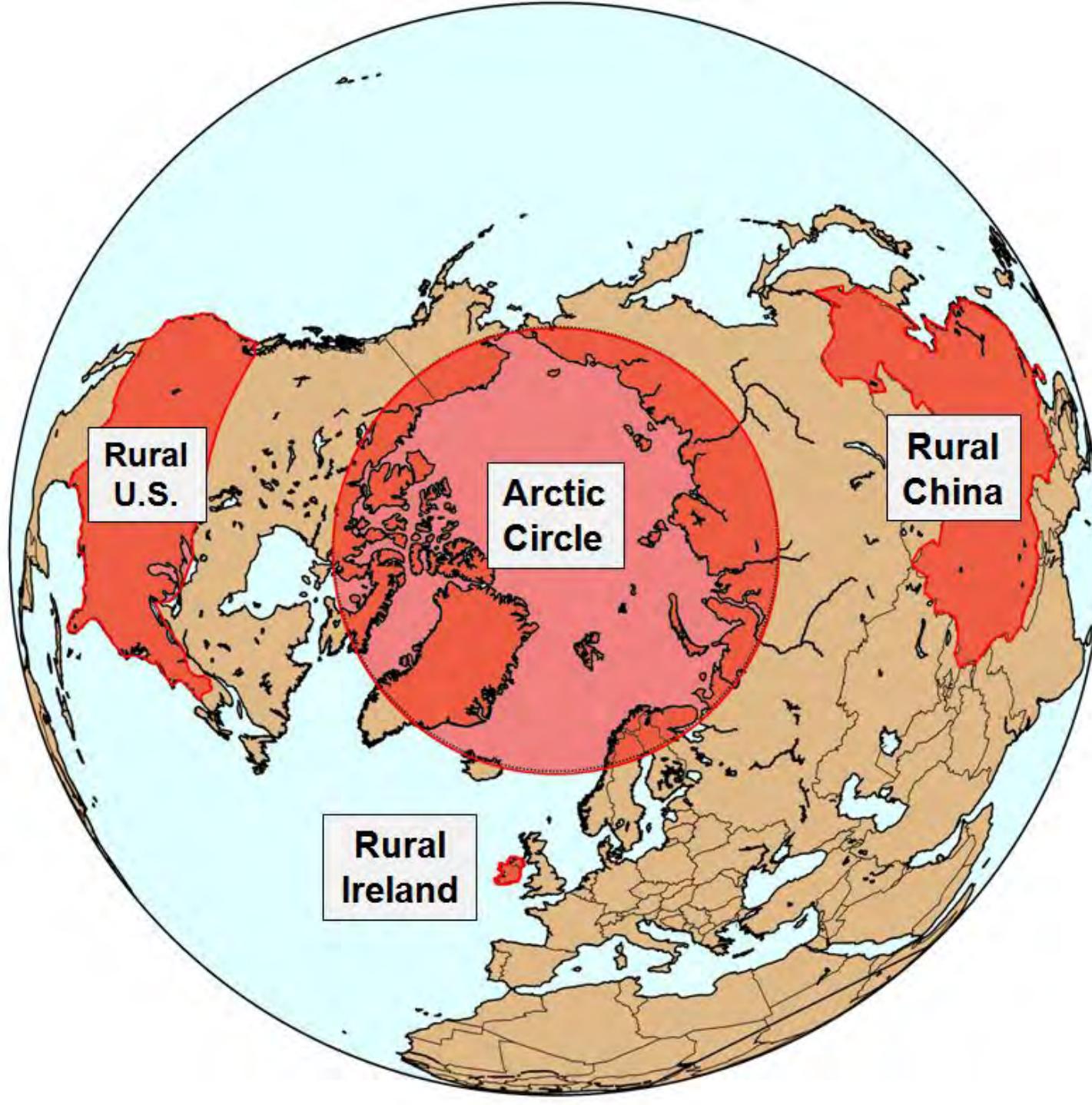
Photo courtesy of Anthony Watts and www.surfacestations.org

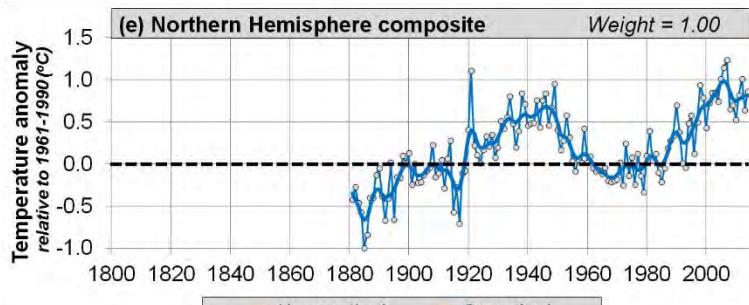
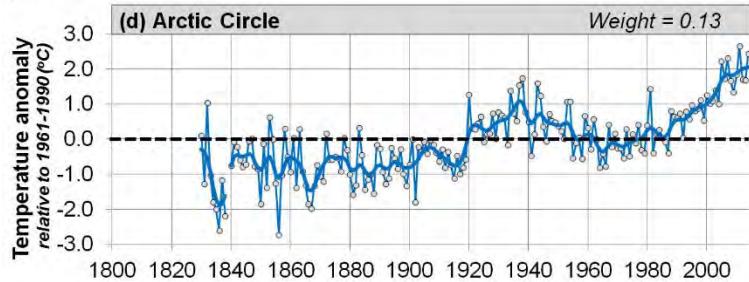
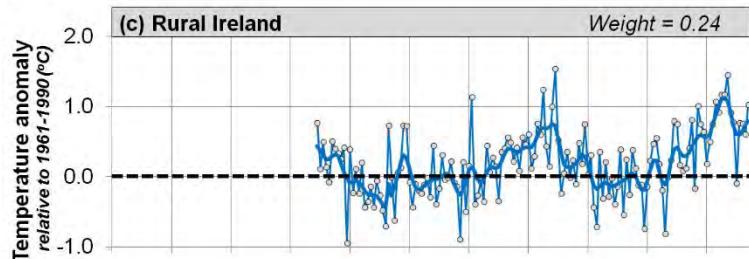
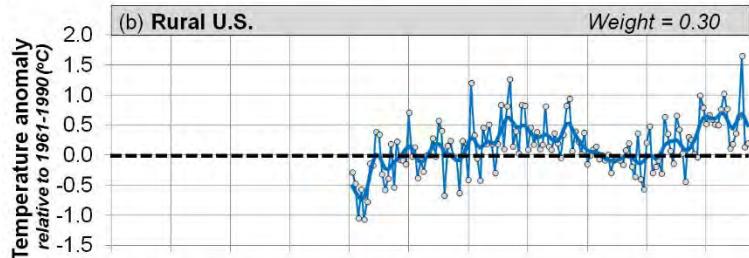
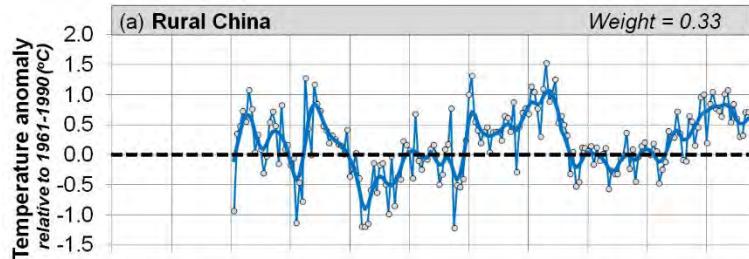
A clear evidence for Urban Heat Island effects: Tokyo and Hachijojima Island



A clear evidence for Urban Heat Island effects: Tokyo and Hachijo Island



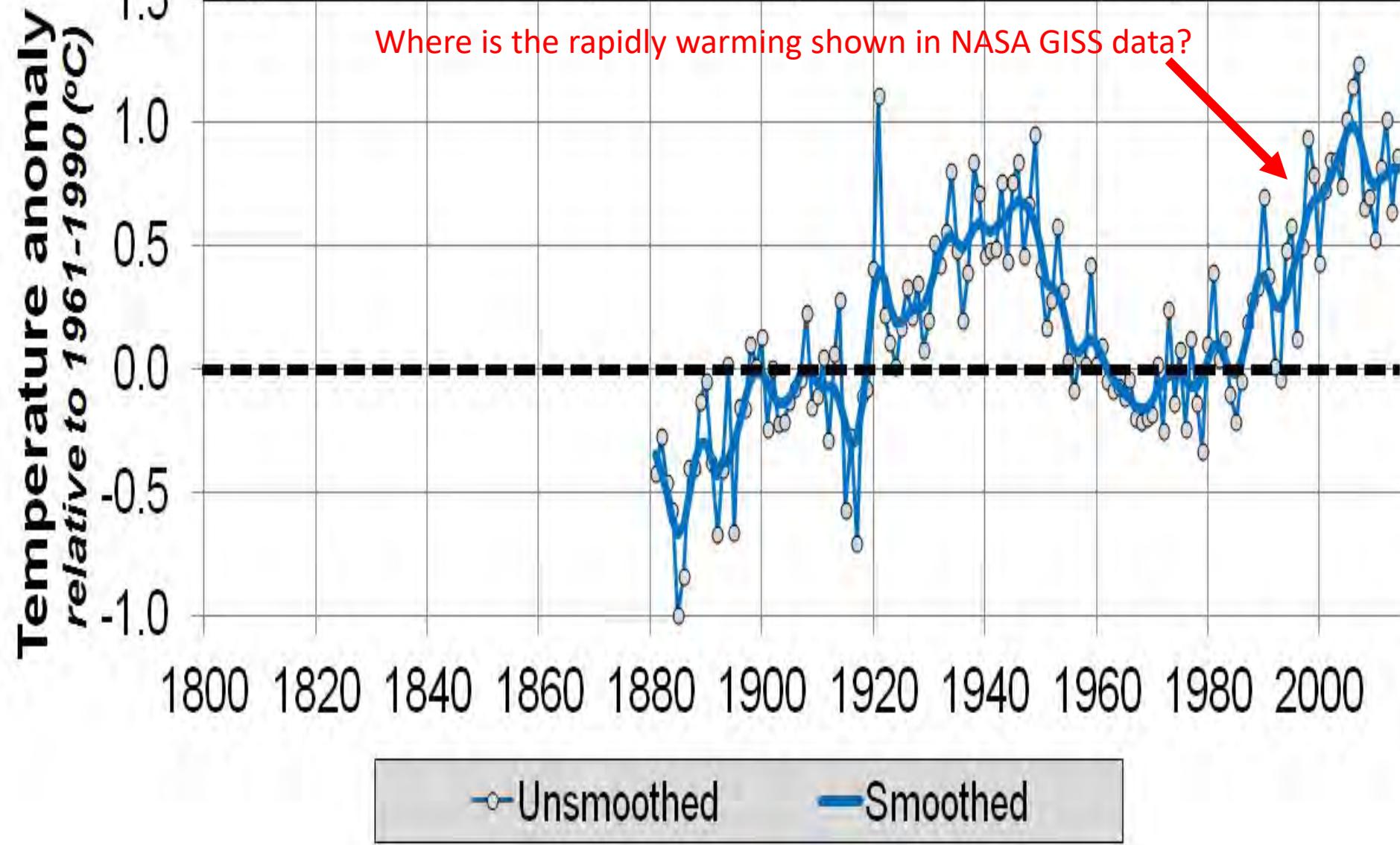


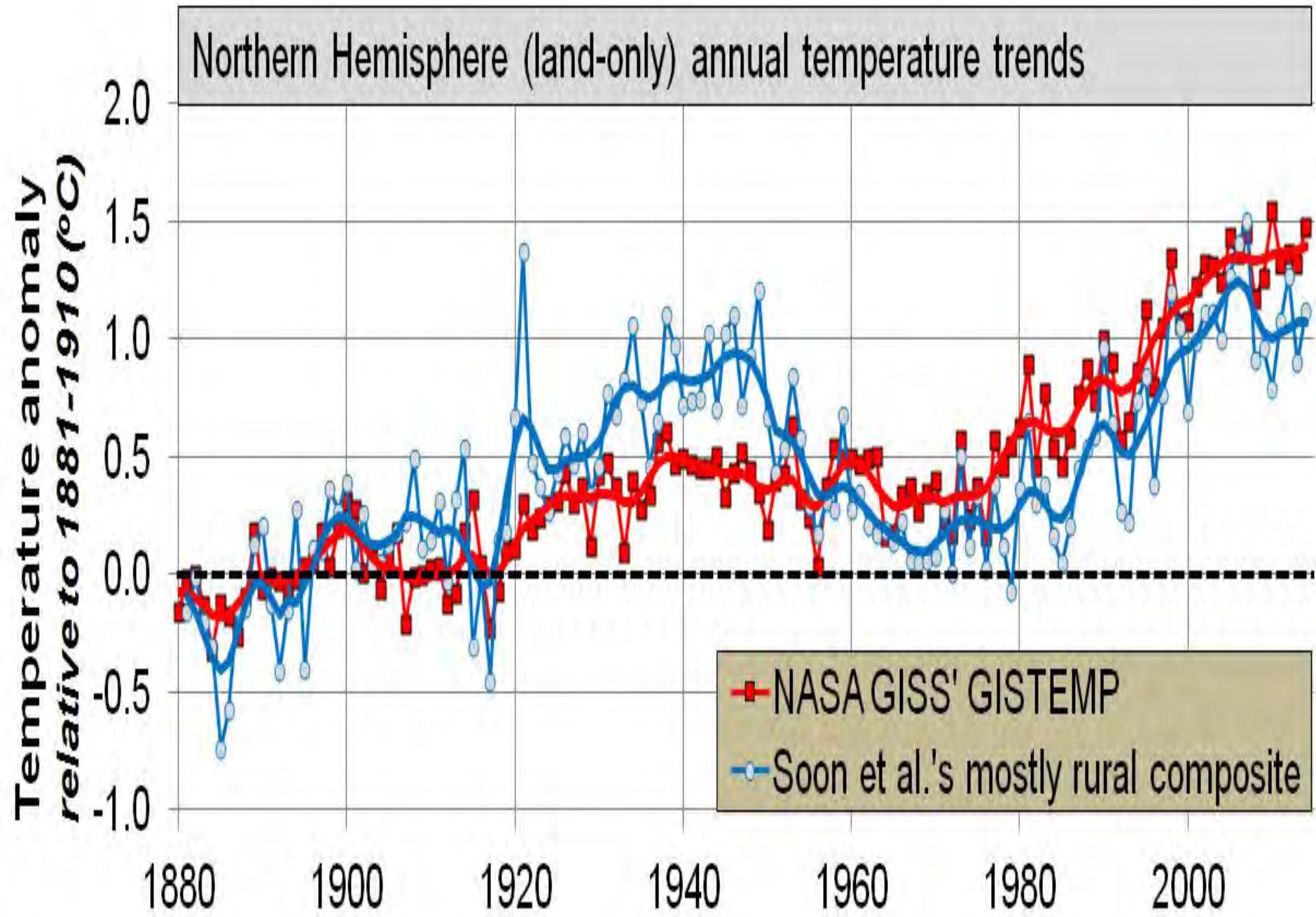


(e) Northern Hemisphere composite

Weight = 1.00

Where is the rapidly warming shown in NASA GISS data?



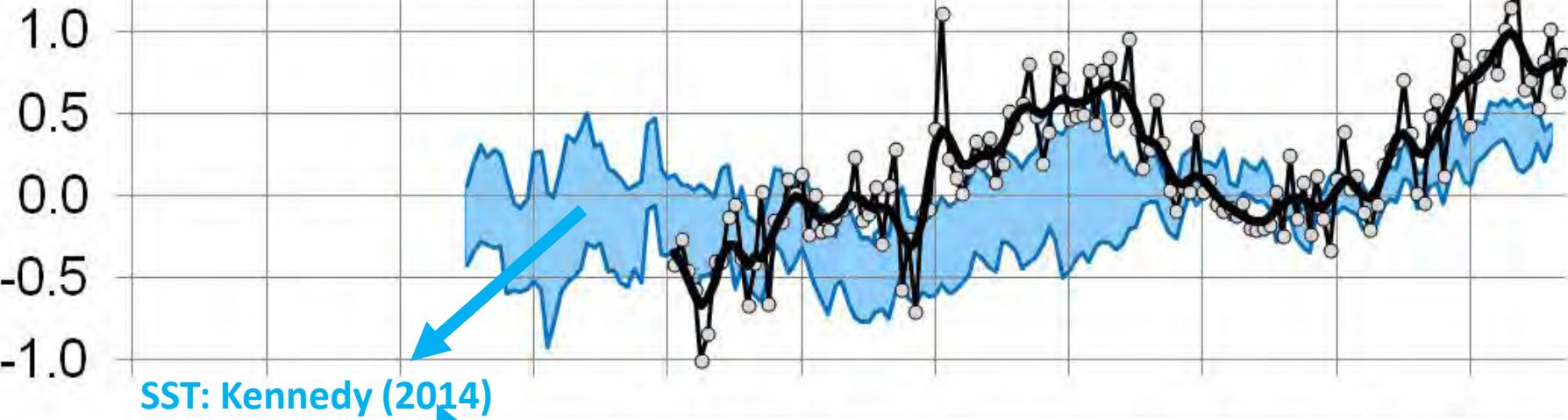


Which record
is correct:

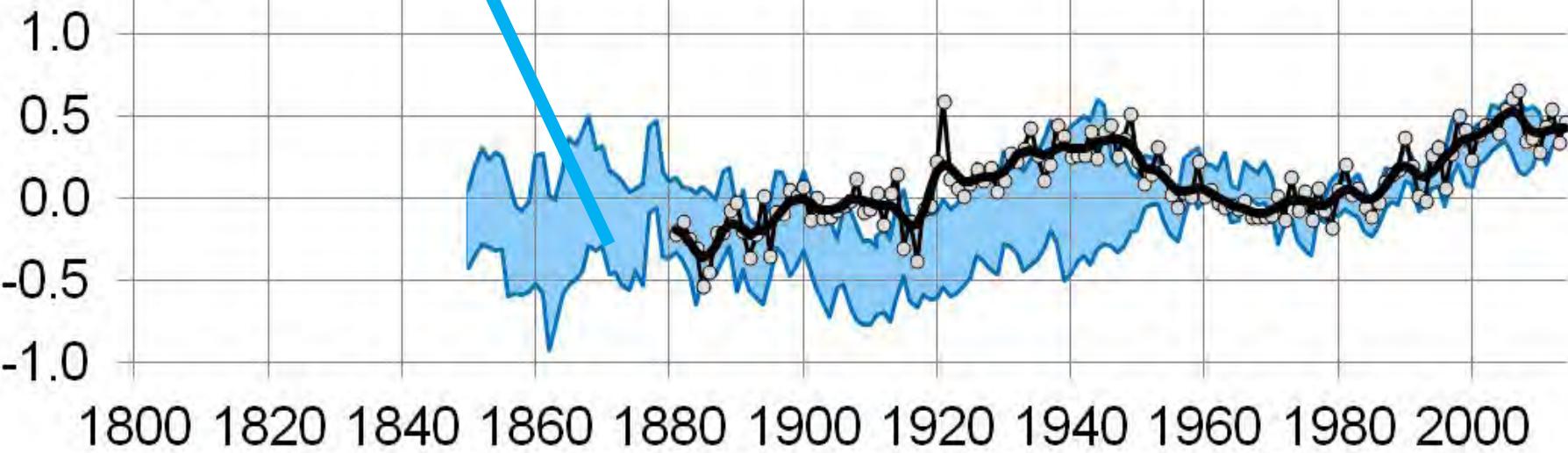
our new NH composite
or NASA GISS?

(a) Northern Hemisphere composite (land) vs. SST

Temperature anomaly ($^{\circ}\text{C}$)



(b) Composite rescaled $\times 0.53 \rightarrow$ same variance as SST



— Sea Surface Temperatures \circ —Unsmoothed —Smoothed

Look what happened when you consider the ocean heat content

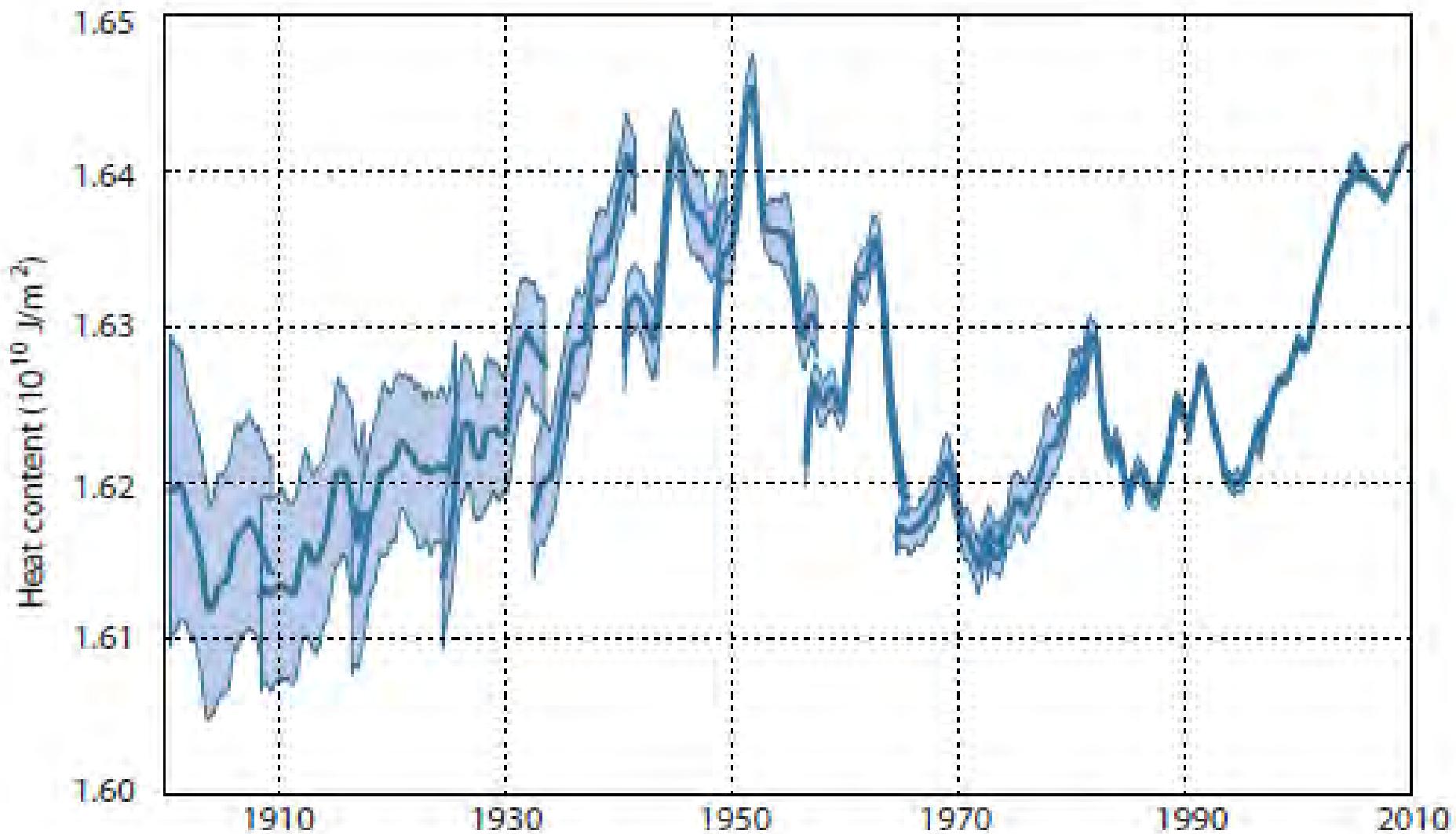
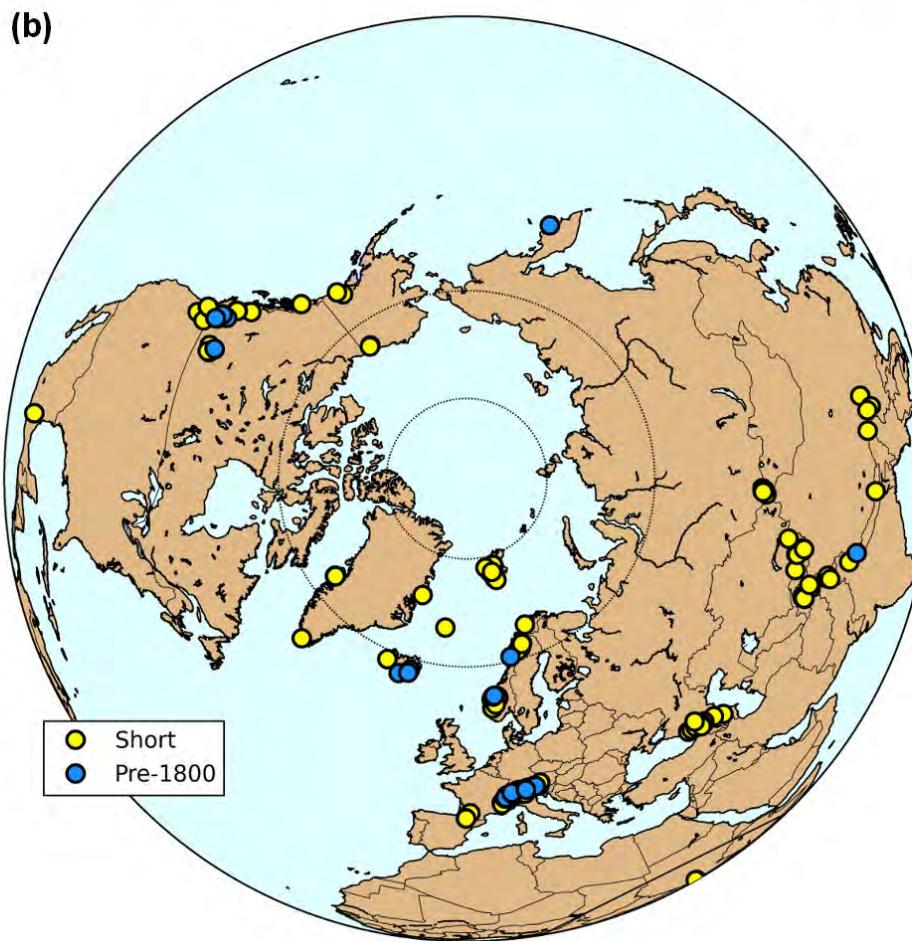
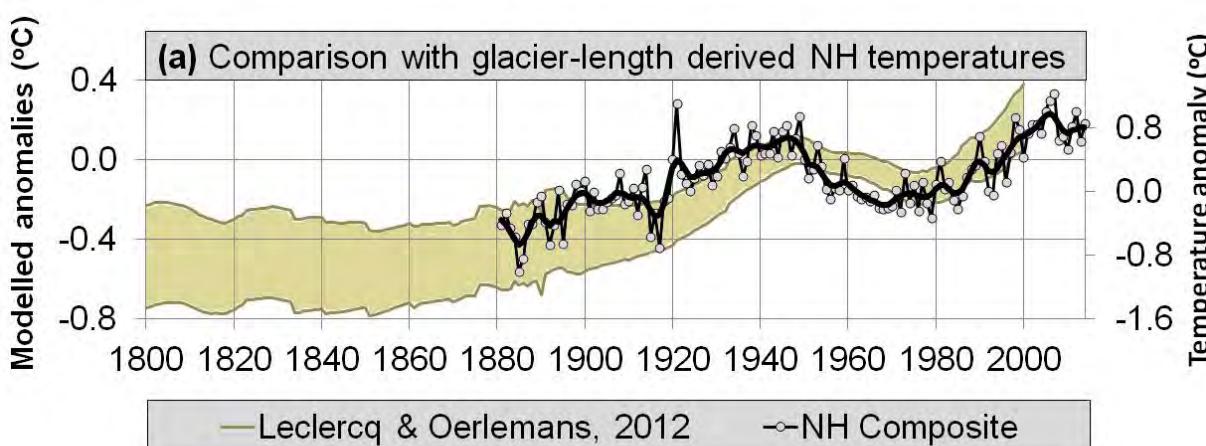
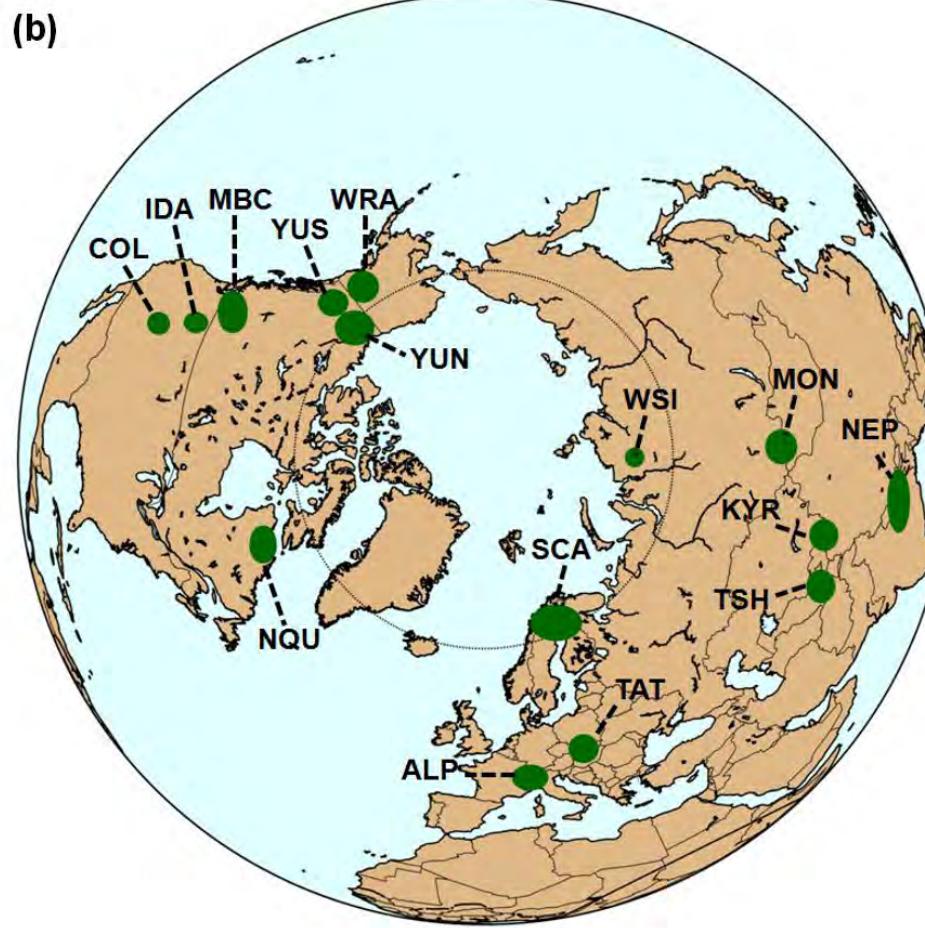
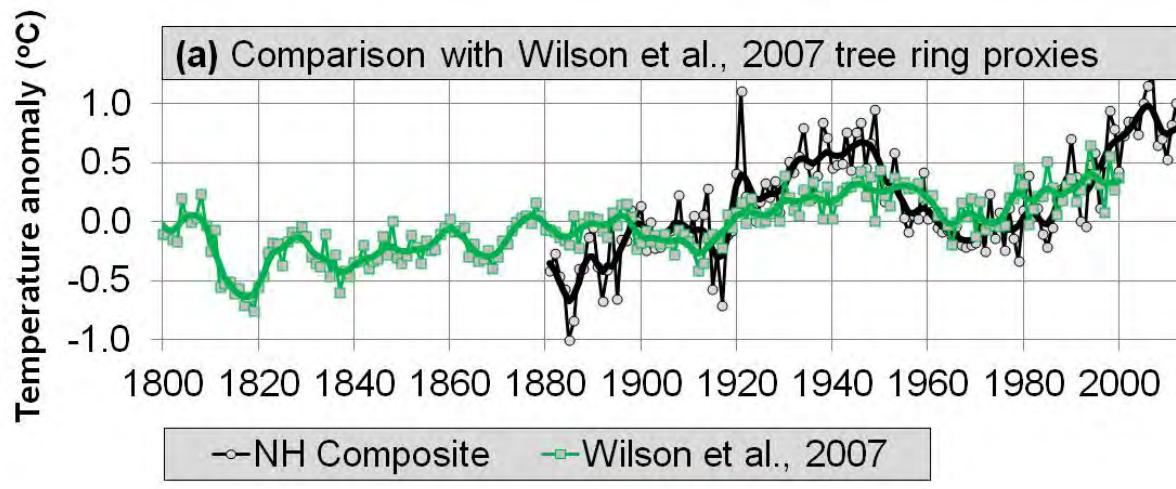
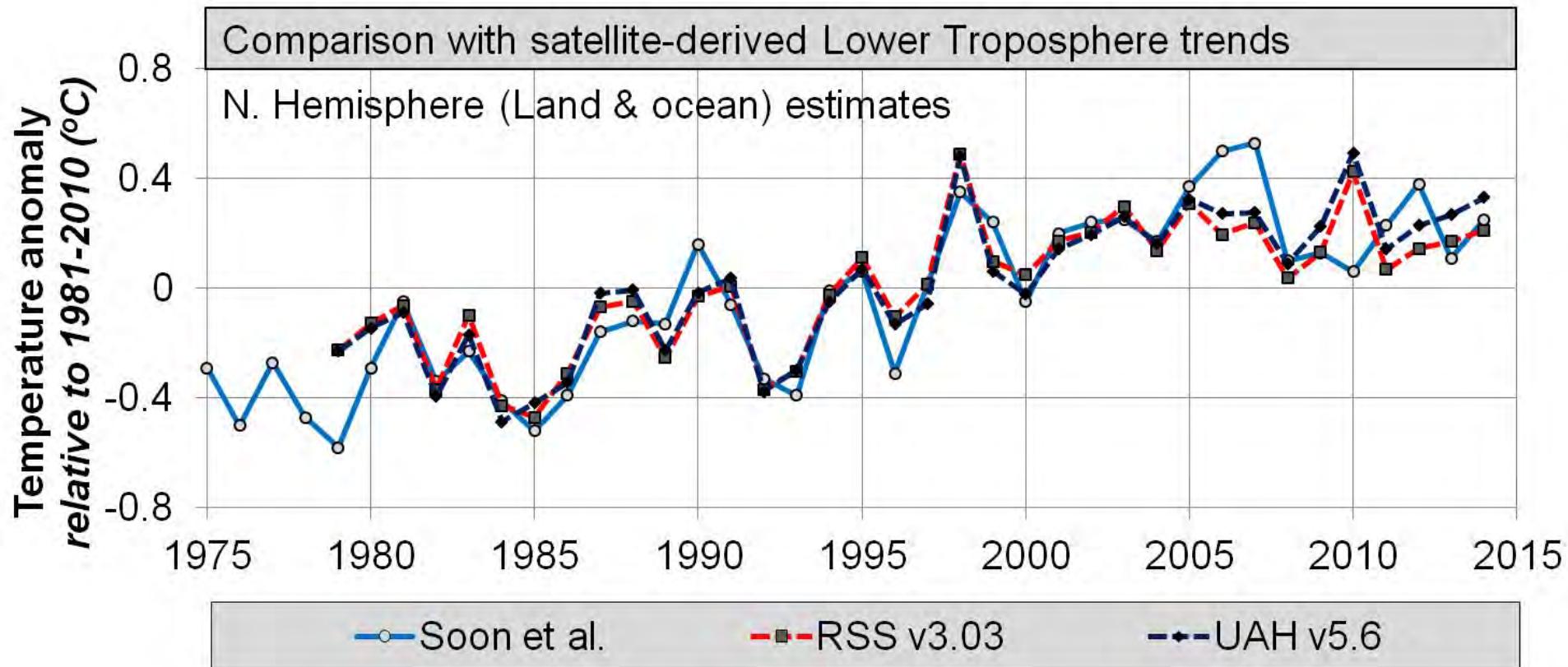


Figure 6: Global average ocean heat content for the upper 300 m.
From the ECMWF CERA-20C reanalysis ensemble, and redrawn from Laloyaux et al. Figure 10.





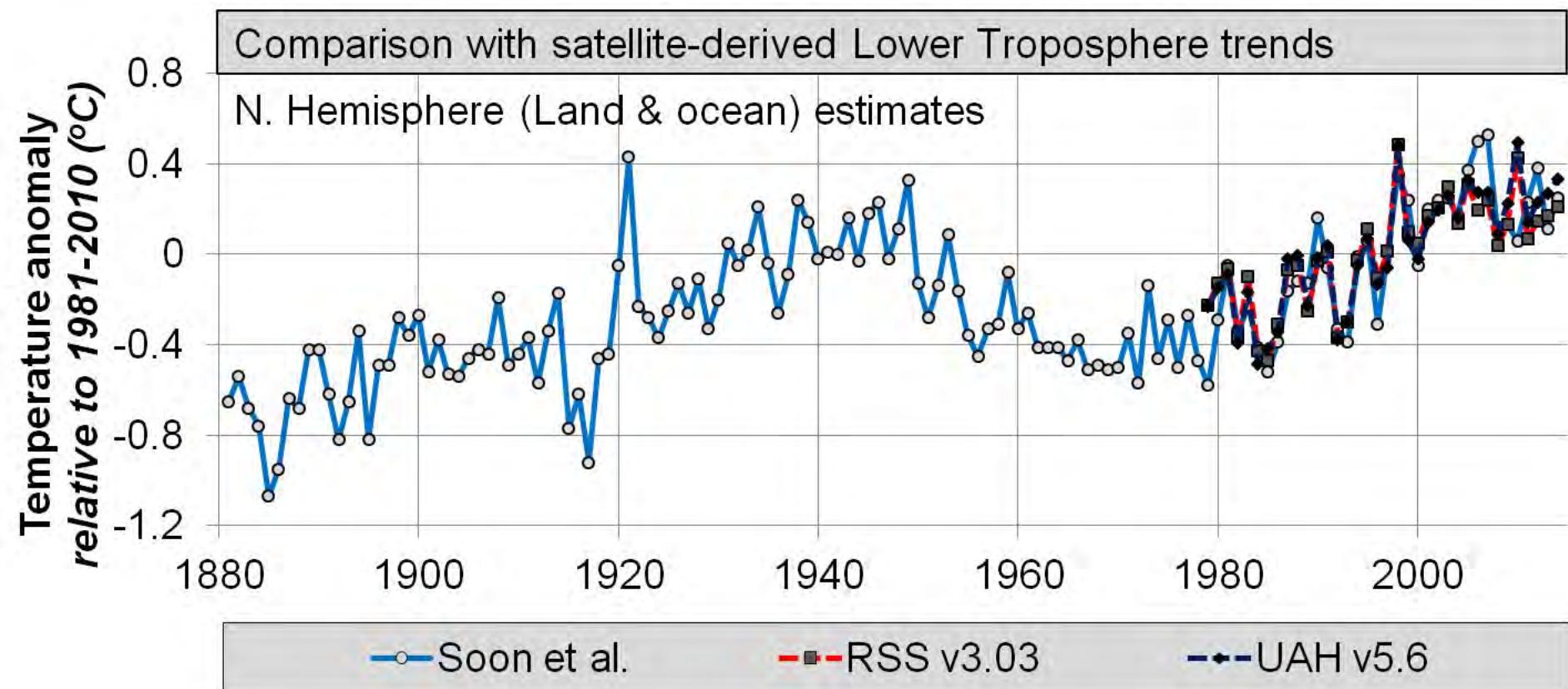
What about
the satellite data?



Sources (Accessed September 2015)

RSS: http://data.remss.com/msu/monthly_time_series/

UAH: <http://nsstc.uah.edu/climate/>



Sources (Accessed September 2015)

RSS: http://data.remss.com/msu/monthly_time_series/

UAH: <http://nsstc.uah.edu/climate/>

The weather-climate system is powered by solar energy



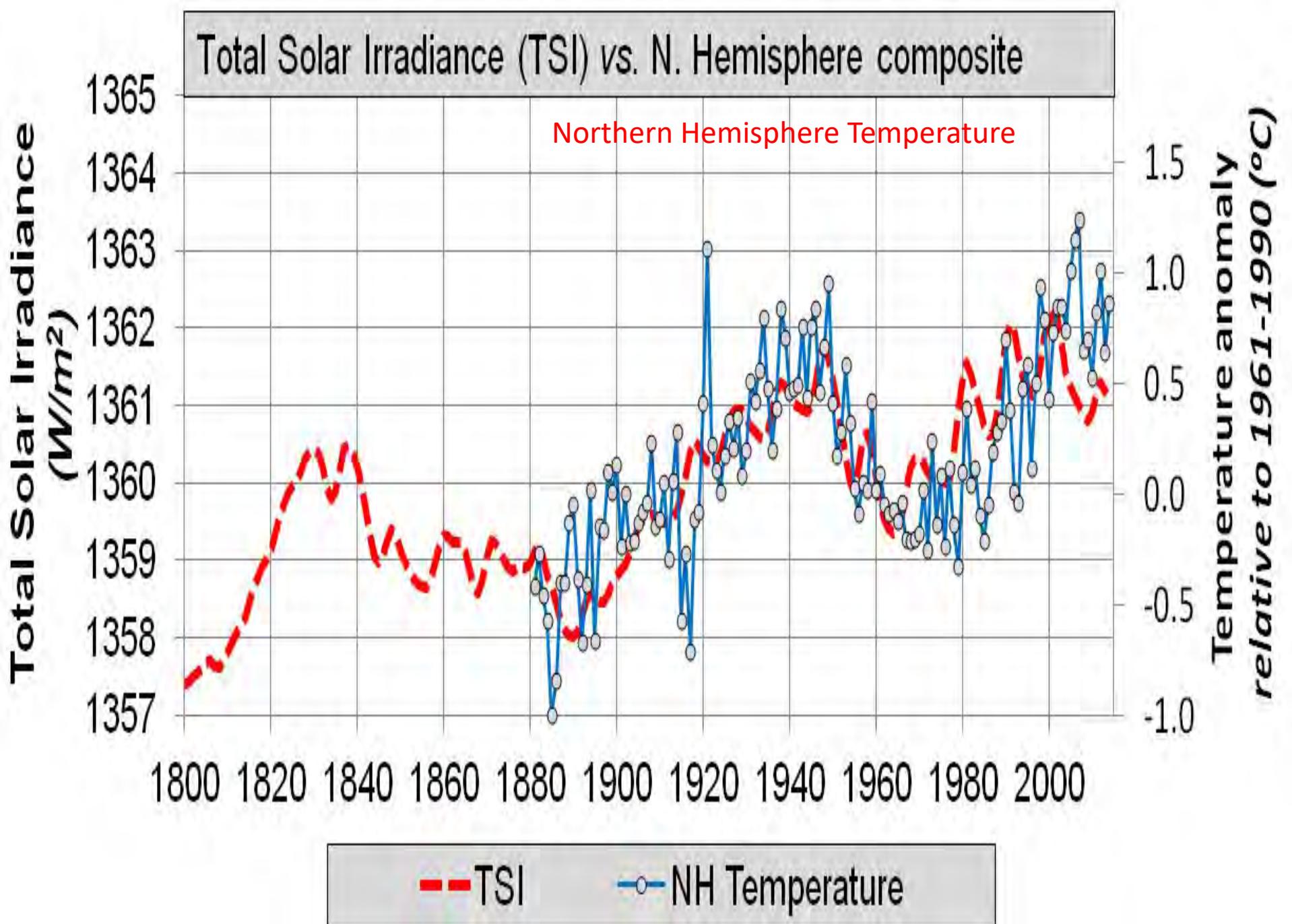
Power: $4 \times 10^{26} \text{ W}$ $2 \times 10^{17} \text{ W}$
(world most powerful laser: $5-10 \times 10^{15} \text{ W}$; 100 petawatts pulse coming*)

Adapted from Jurg Beer 2007's presentation

*Ruxin Li, Shanghai Superintense Ultrafast Laser Facility (January 24, 2018 Science Magazine News)

12-Day Journey of Sunspot 2339 (May 5-17, 2015)

Solar Dynamics Observatory (SDO) using the Helioseismic and Magnetic Imager (HMI) instrument



(b) Total Solar Irradiance (TSI) vs. Rural U.S.

Total Solar Irradiance
(W/m^2)

1365
1364
1363
1362
1361
1360
1359
1358
1357

1800 1820 1840 1860 1880 1900 1920 1940 1960 1980 2000

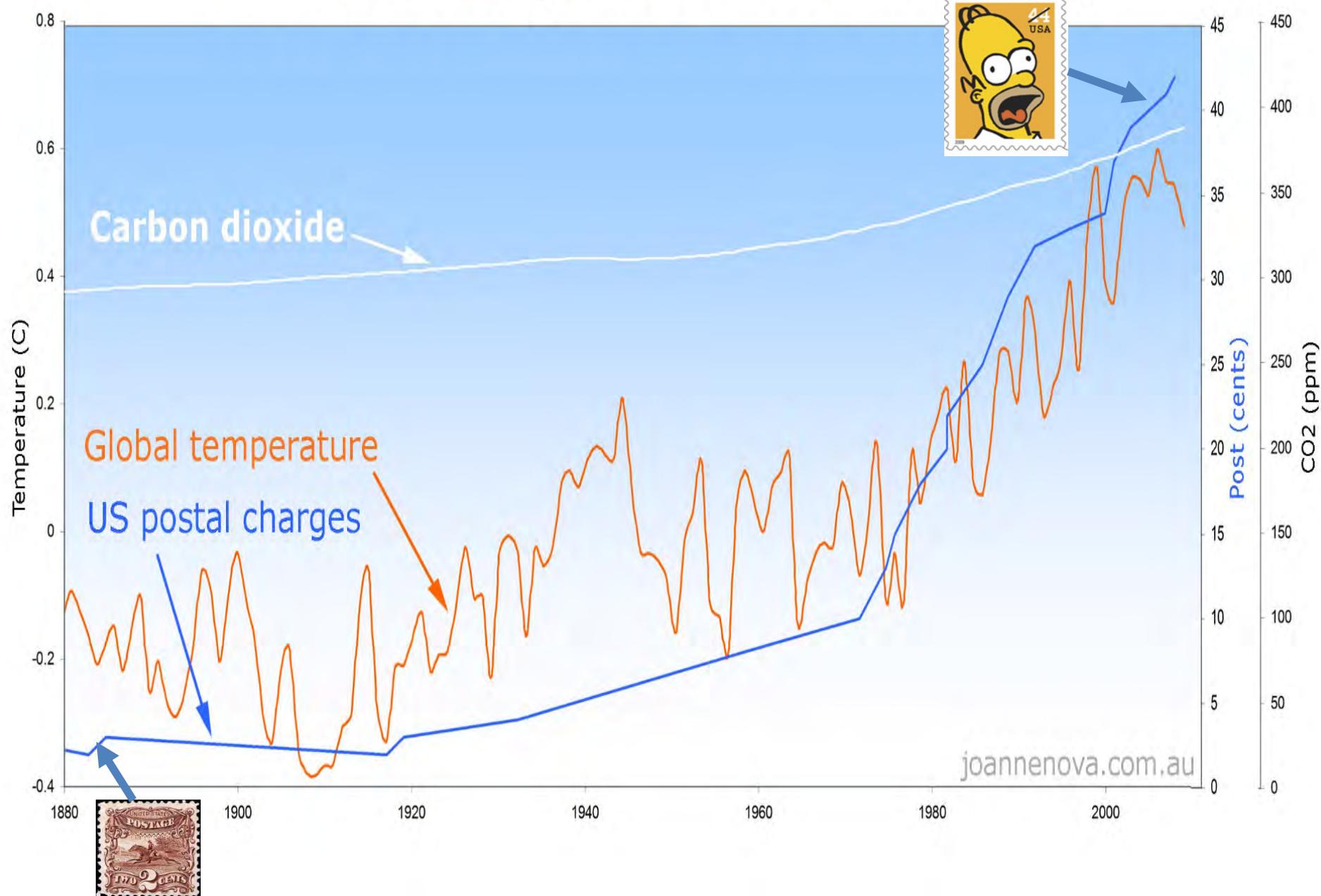
USA Temperature

1.8
1.2
0.6
0.0
-0.6
-1.2

Temperature anomaly
relative to 1961-1990 ($^{\circ}C$)

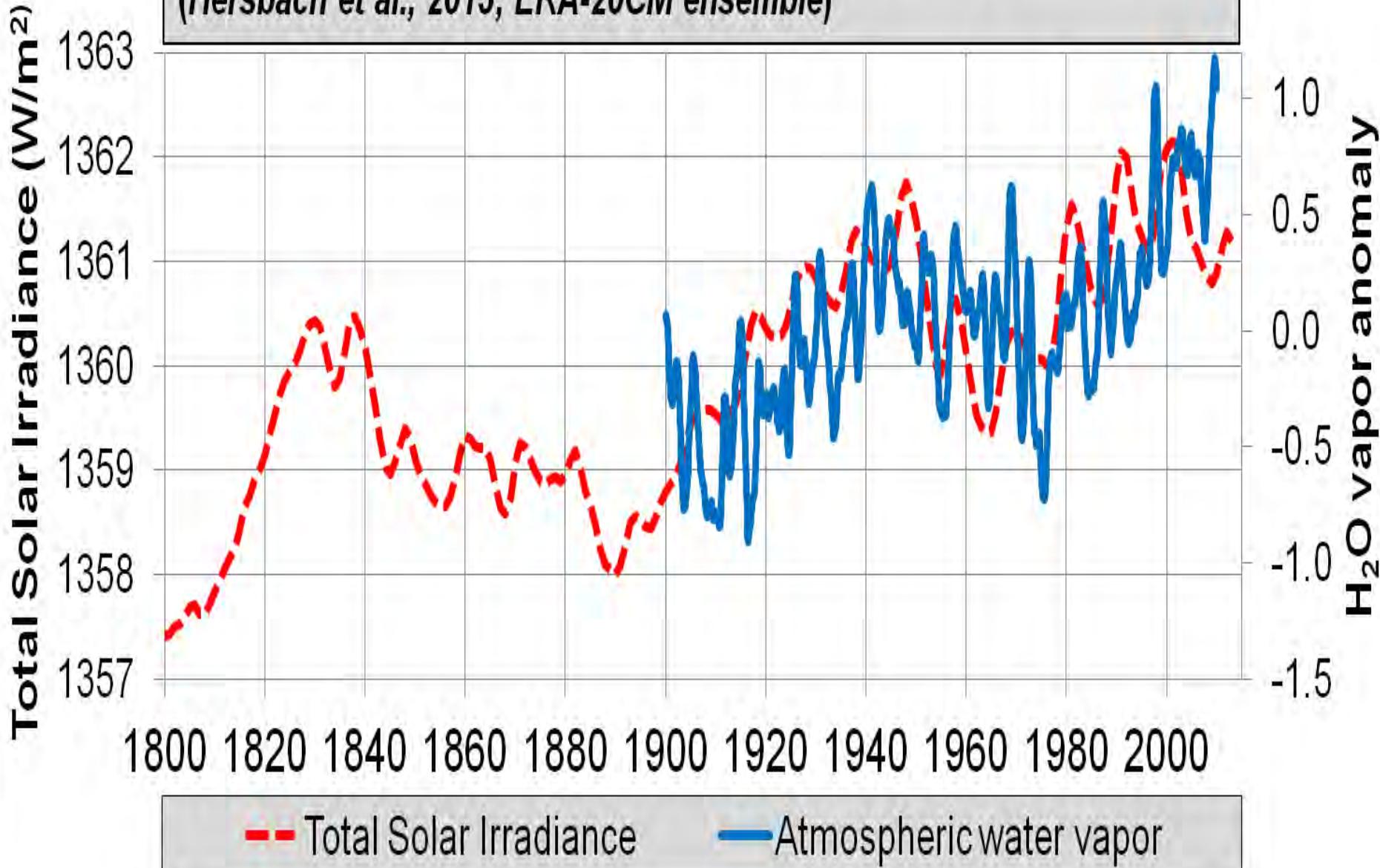
— TSI —○— Unsmoothed —— Smoothed

US Postal charges drive Global Warming



**What is the real reason for the
close correlation between Solar
Radiation and the composite
NH temperature?**

Total column H_2O vapor (over ocean) vs. Total Solar Irradiance
(Hersbach et al., 2015; ERA-20CM ensemble)



A great HOAX or gross incompetence by Willie Soon ?

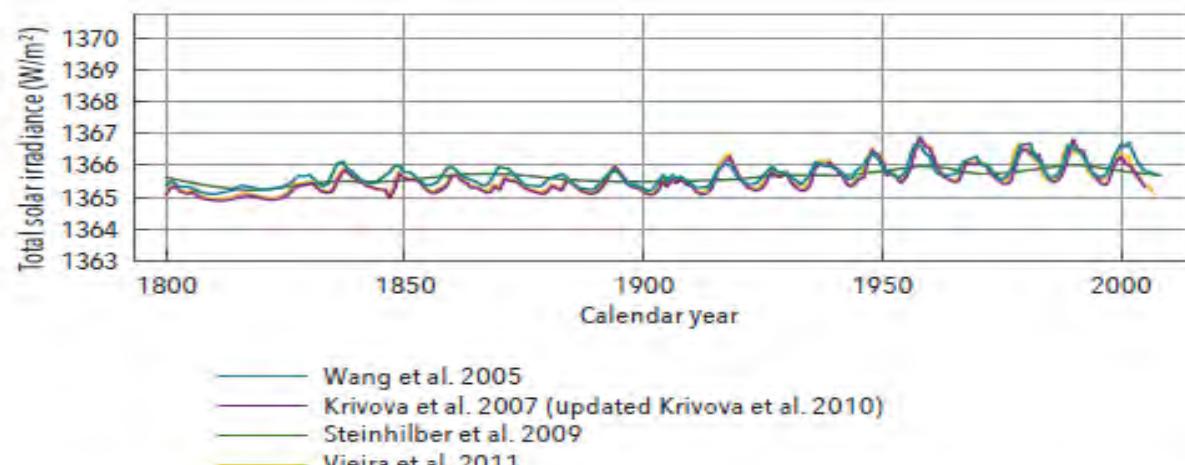
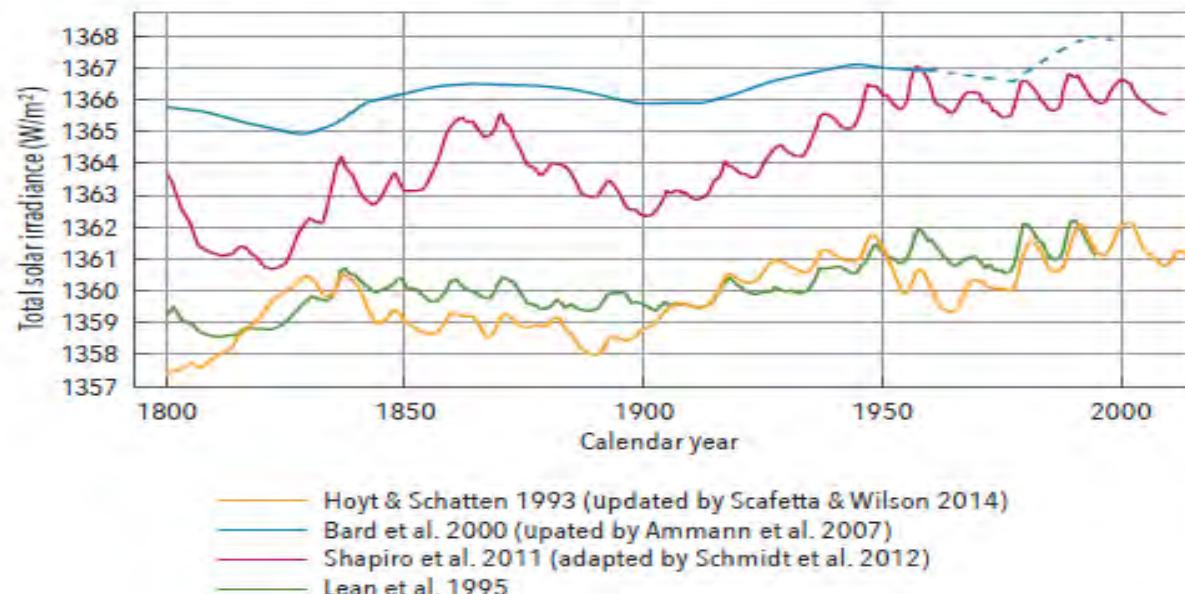


Image courtesy of the Onion (June 8, 2018)

Many different estimates of solar variability

“High variability”
estimates ignored by IPCC
AR5 climate models!

Figure 11.1 Different measures of total solar irradiance



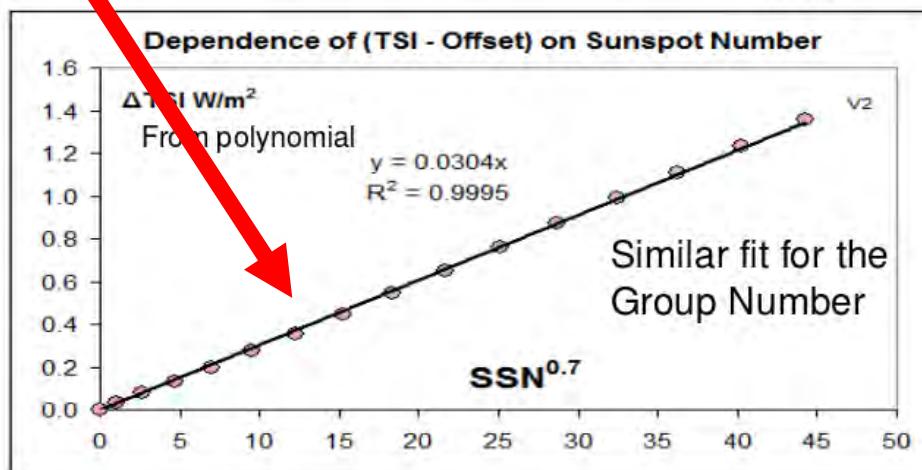
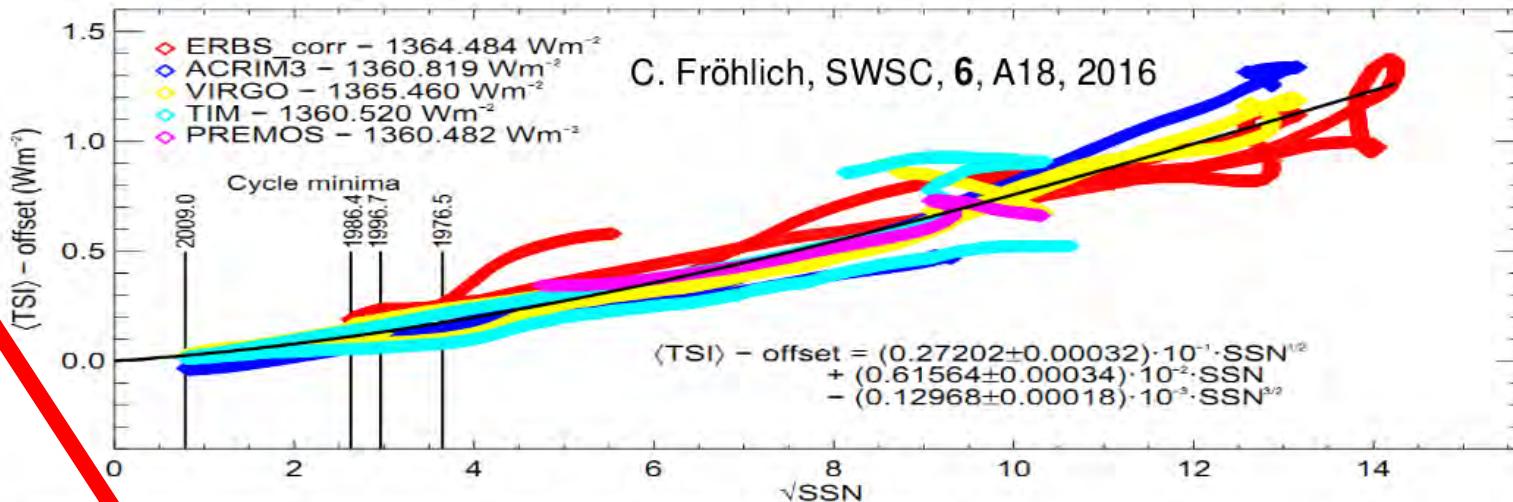
The top chart shows the results from four studies suggesting relatively high solar variability since 1800. (The dashed blue line represents the work of Ammann et al. 2007, which was used to update Bard et al. 2000.) This contrasts with the bottom chart showing the results from low solar variability studies used as ‘natural forcings’ for the CMIP5 Global Climate hindcasts in the IPCC’s Fifth Assessment Report (5AR).

TSI is simply scaled as $SN^{0.7}$

If TRUE: stop measuring TSI because counting SN is enough!

(NOTE: low or zero SN number has NO physical meaning nor precision for TSI)

Claus Fröhlich Lined up TSIs as a Function of the Square Root of the Sunspot Number



The relationship is not quite linear in $SSN^{0.5}$, but rather in $SSN^{0.7}$ which is a very close [and much simpler] fit to Fröhlich's polynomial

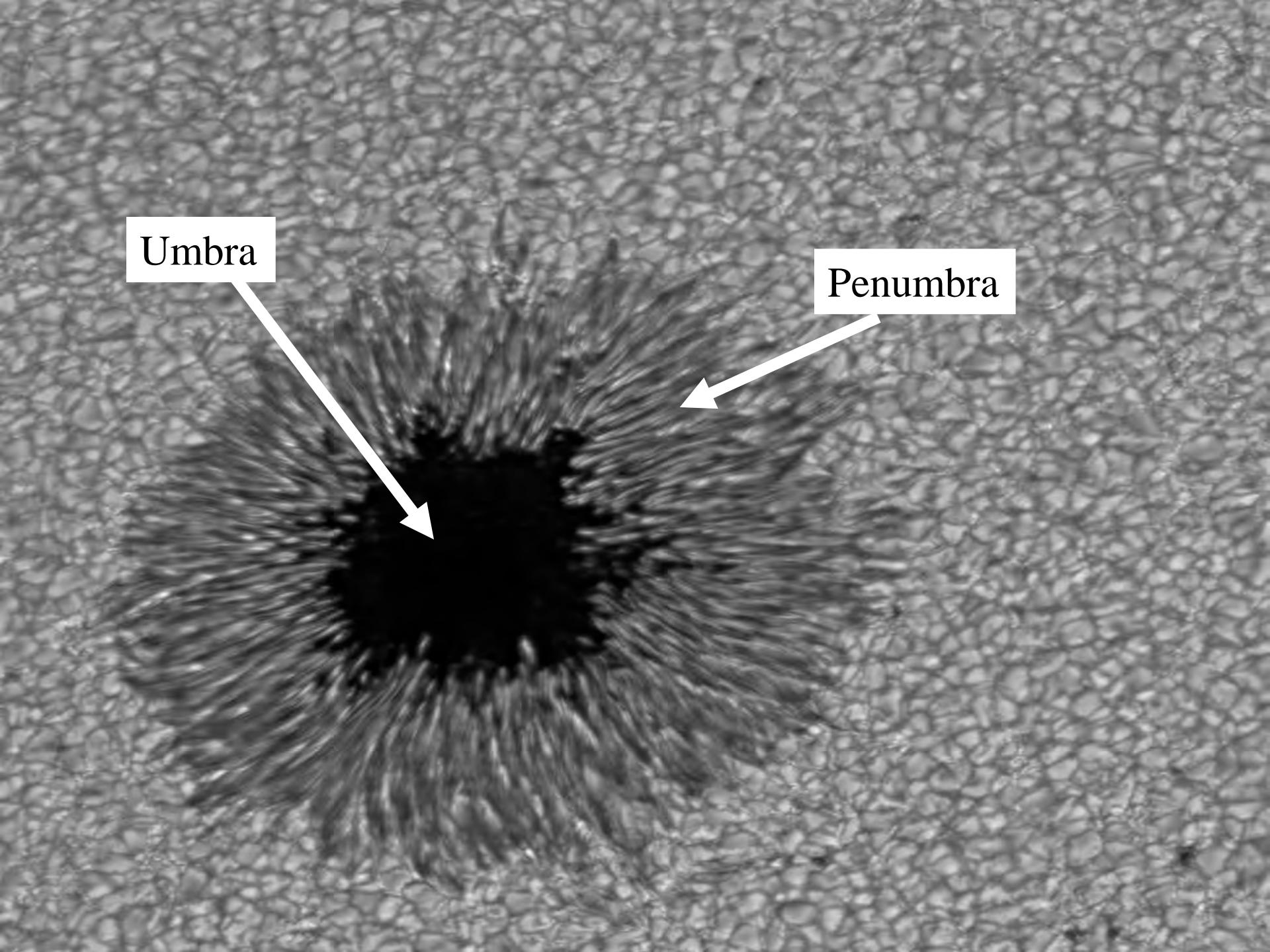
The 1920s-1940s climate
shift cannot (and must not)
be related to
the Sun's activity?

A Curious History of Sunspot Penumbrae

D.H. Hathaway

If the penumbrae of these small sunspots vary in area by a factor of more than two over long (multi-decadal) time-scales, then estimates of the Sun's total irradiance based on sunspot number or sunspot area could be substantially in error.

Note: spot groups smaller than 10 msh (or about 30 million km² or diameter of about 6 thousand km)

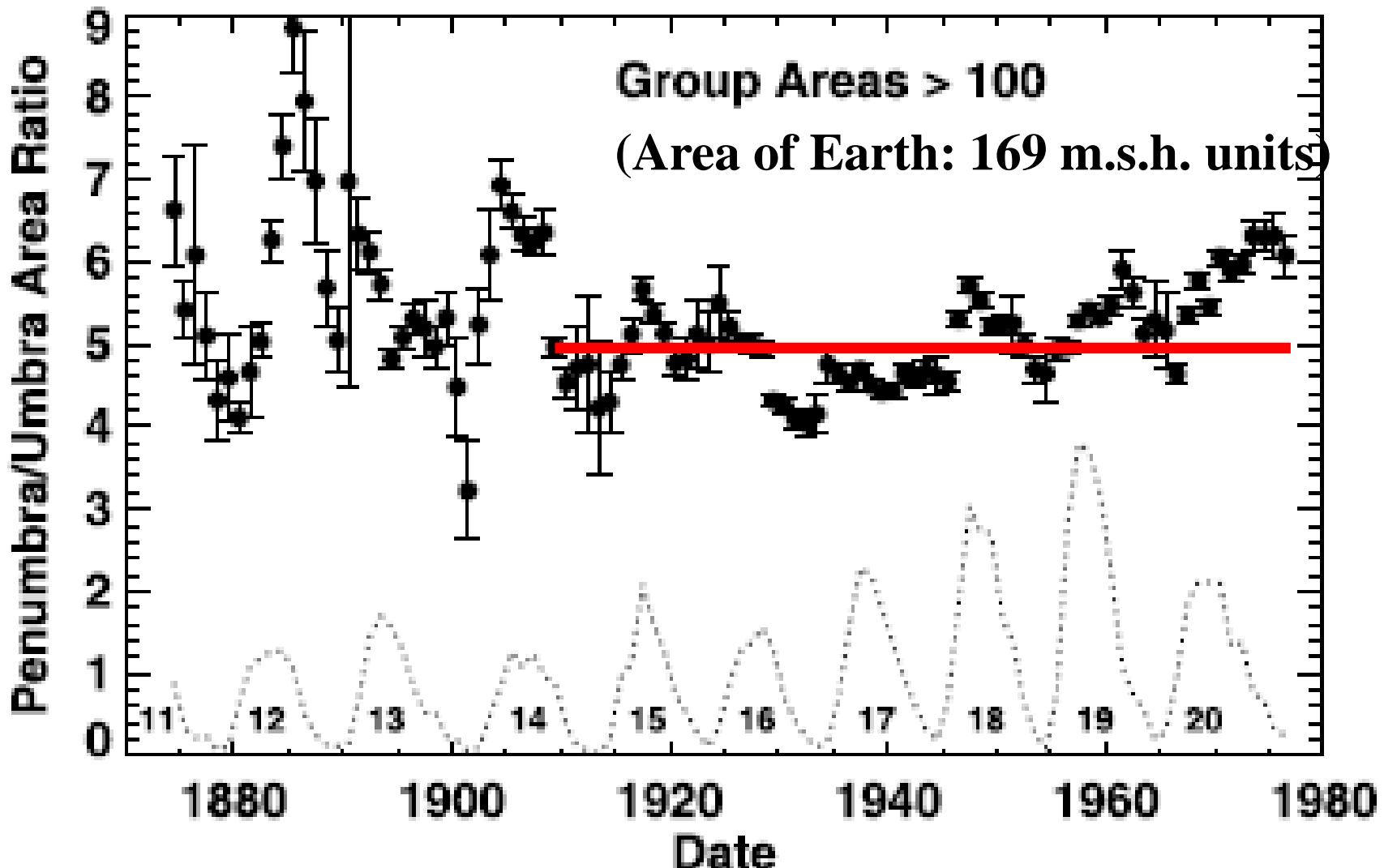


A black and white photograph of a solar eclipse. The Sun is mostly obscured by the Moon, with a bright, granular corona visible around the perimeter. The central umbra (total shadow) is a dark, irregular region, while the surrounding penumbra (partial shadow) is a lighter, more diffuse area. Two white arrows point from labels to these regions: one from 'Umbra' to the dark center, and another from 'Penumbra' to the surrounding lighter area.

Umbra

Penumbra

The size of sunspots matters: Larger versus smaller spots



THE CLASSIFICATION OF SUNSPOT GROUPS

PATRICK S. McINTOSH

NOAA Space Environment Lab, Boulder, CO 80303-3328, U.S.A.

MODIFIED
ZURICH CLASS

McIntosh Sunspot Group Classification

**There are 60
different distinct
types of sunspot
groups one can
classify**

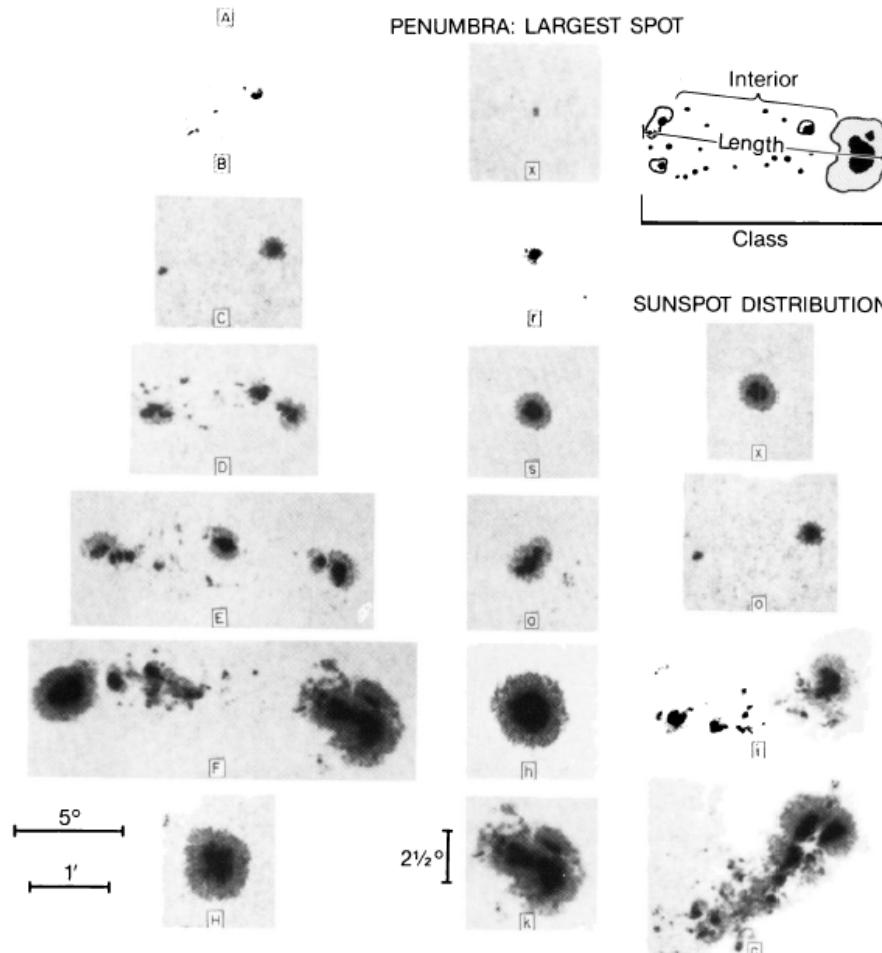
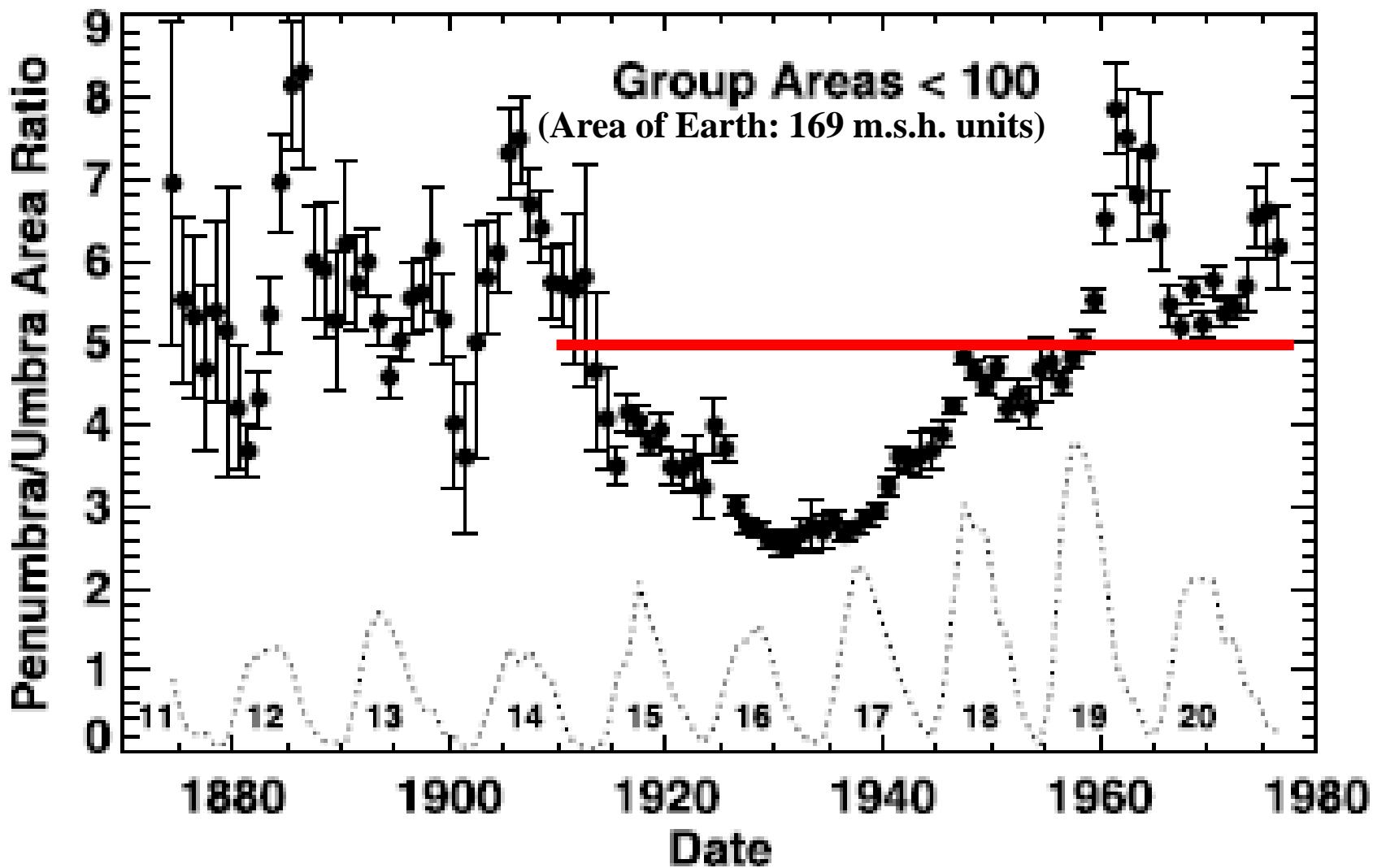


Fig. 1. The 3-component McIntosh classification, with examples of each category.

When sunspot groups are dominated by smaller spots with only umbrae (no penumbrae), the Sun is brighter?



A Curious History of Sunspot Penumbrae

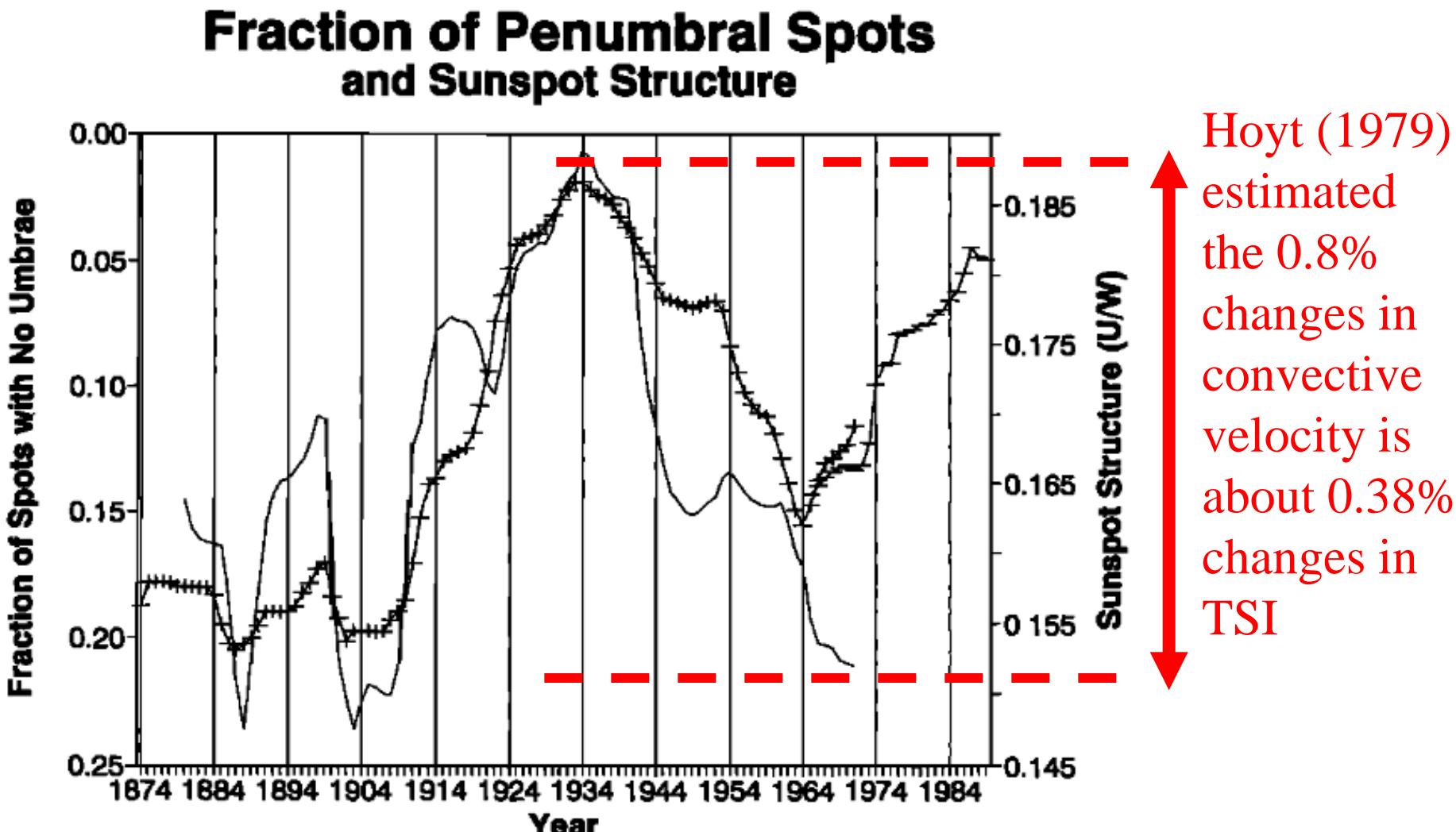
D.H. Hathaway

The IPCC-promoted solar irradiance record has the obvious assumption of constant unchanged ratio of penumbra to umbra ratio is OBVIOUSLY and proven to be WRONG: When will they correct their own known errors?



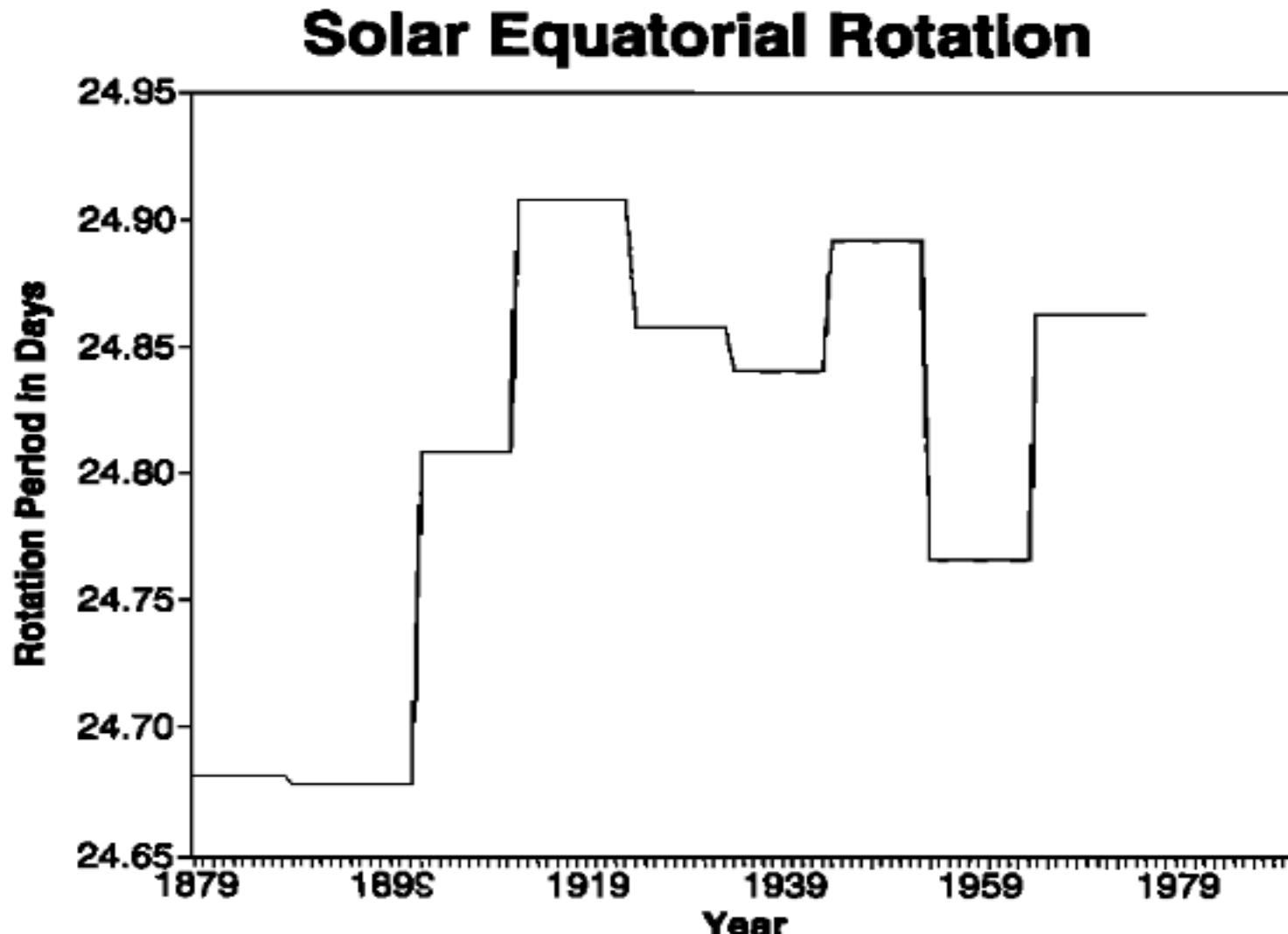
Reconstructions of past irradiance variations (Foukal and Lean, 1990) use total sunspot areas and assume that the ratio of penumbra to umbra area is unchanged. If there are significant changes to the sunspot population, conclusions drawn from these reconstructions are compromised.

Evidence for secular component on the modulation of solar TSI: Changes in solar convection activity



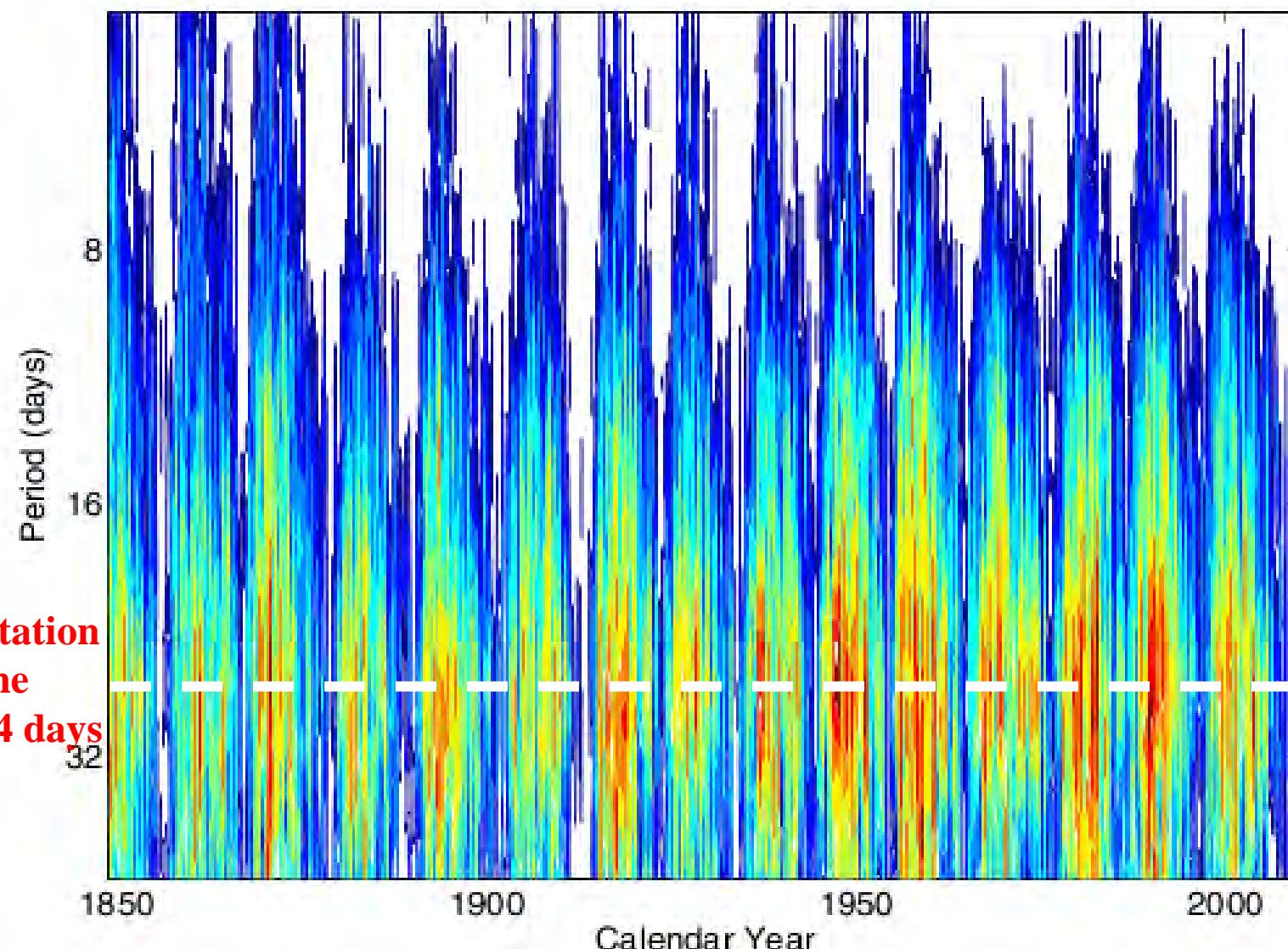
Sources: Hoyt (1979a,b) and Hoyt and Schatten (1993)

Evidence for secular component on the modulation of solar TSI: Changes in solar equatorial rotation rate



Source: Hoyt and Schatten (1993)

Evidence for secular component on the modulation of solar TSI: Multidecadal changes in rotation rate of the Sun



Another evidence on why the envelope of sunspot maxima may not be the correct proxy for secular or multidecadal-to-centennial changes in solar irradiance or TSI

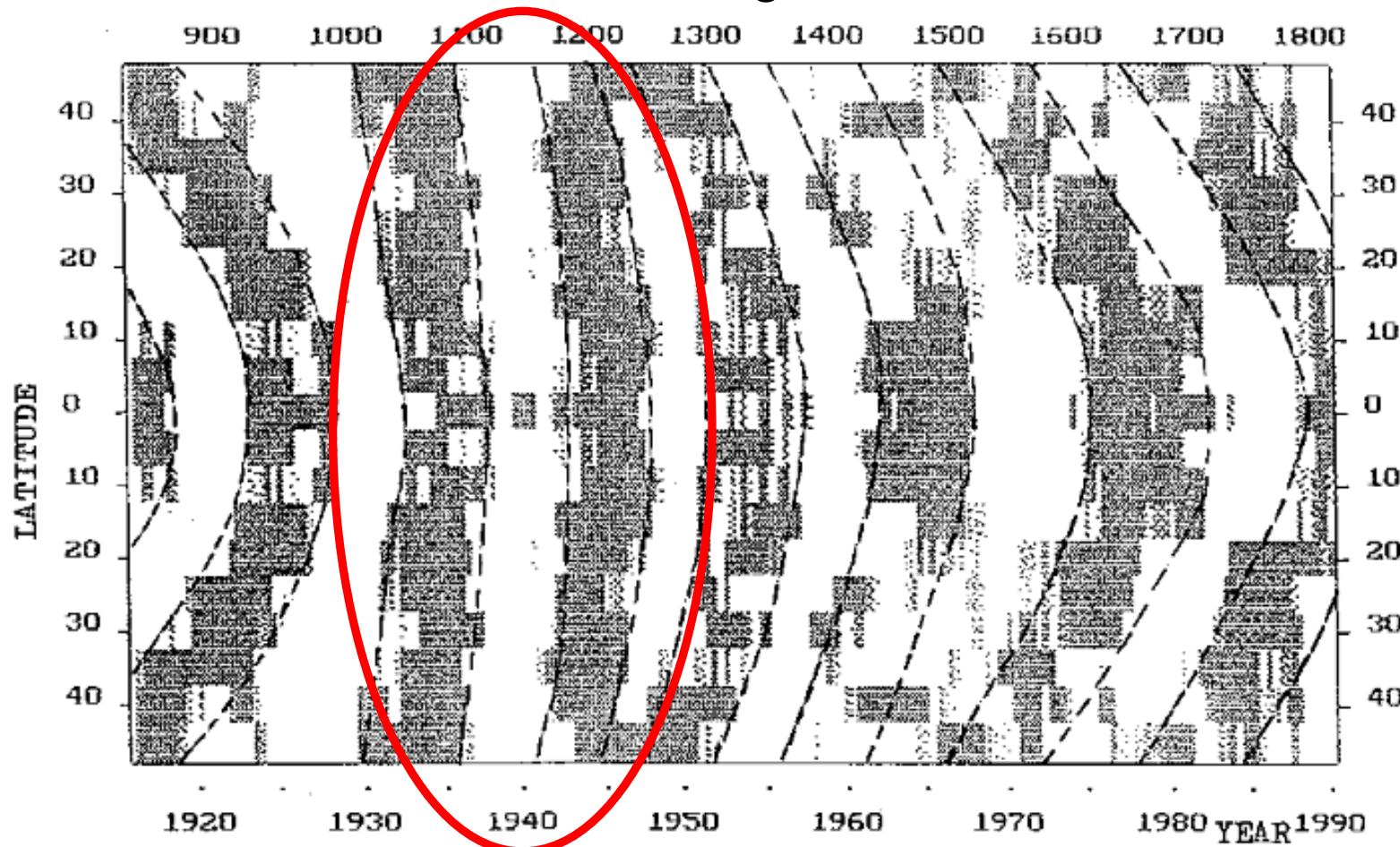


Figure 5. Latitude-time distribution of faster- (light) and slower-than-average rotation (dark) bands in reference to the average rate. The boundaries between the bands correspond to the average rotation rate.



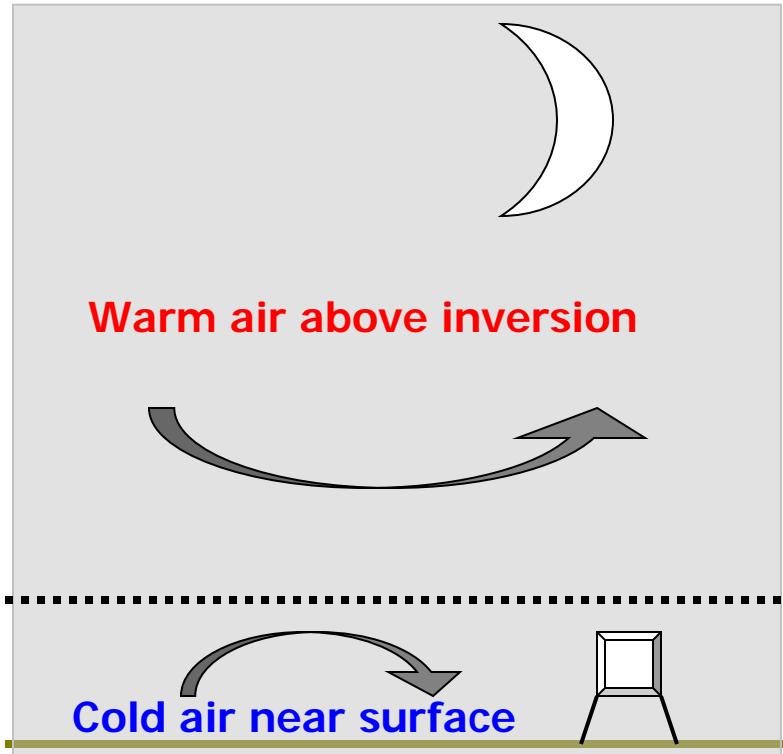
Another proposal to probe
sun-climate relations:

Searching for the Sun in Canada?

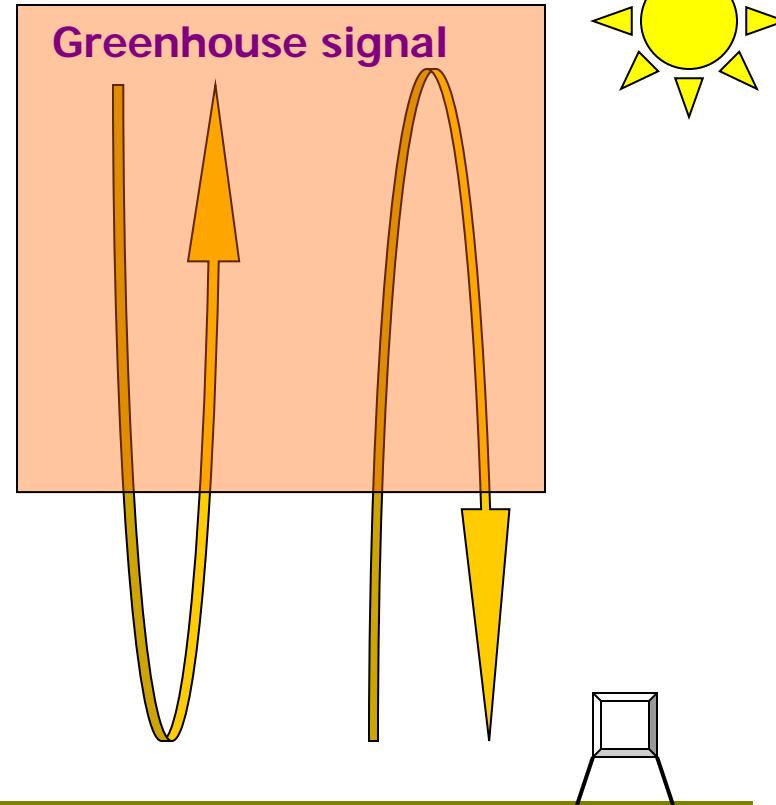
It may be easy to modify
temperature minima
but it is harder to argue for
a change in any observed
temperature maximum

Night vs. Day Surface Temp

Slide Courtesy of Professor John Christy (March 27, 2019)



Nighttime - disconnected shallow layer/inversion. Temperature affected by land-use changes, buildings, farming, etc.



Daytime - deep layer mixing, connected with levels impacted by enhanced greenhouse effect

SEASONAL MIXING HEIGHTS AND INVERSIONS AT EDMONTON, ALBERTA

R. H. MYRICK, S. K. SAKIYAMA,* R. P. ANGLE and H. S. SANDHU

Alberta Department of Environmental Protection, 9820-106 Street, Edmonton, Alberta, T5K 2J6, Canada

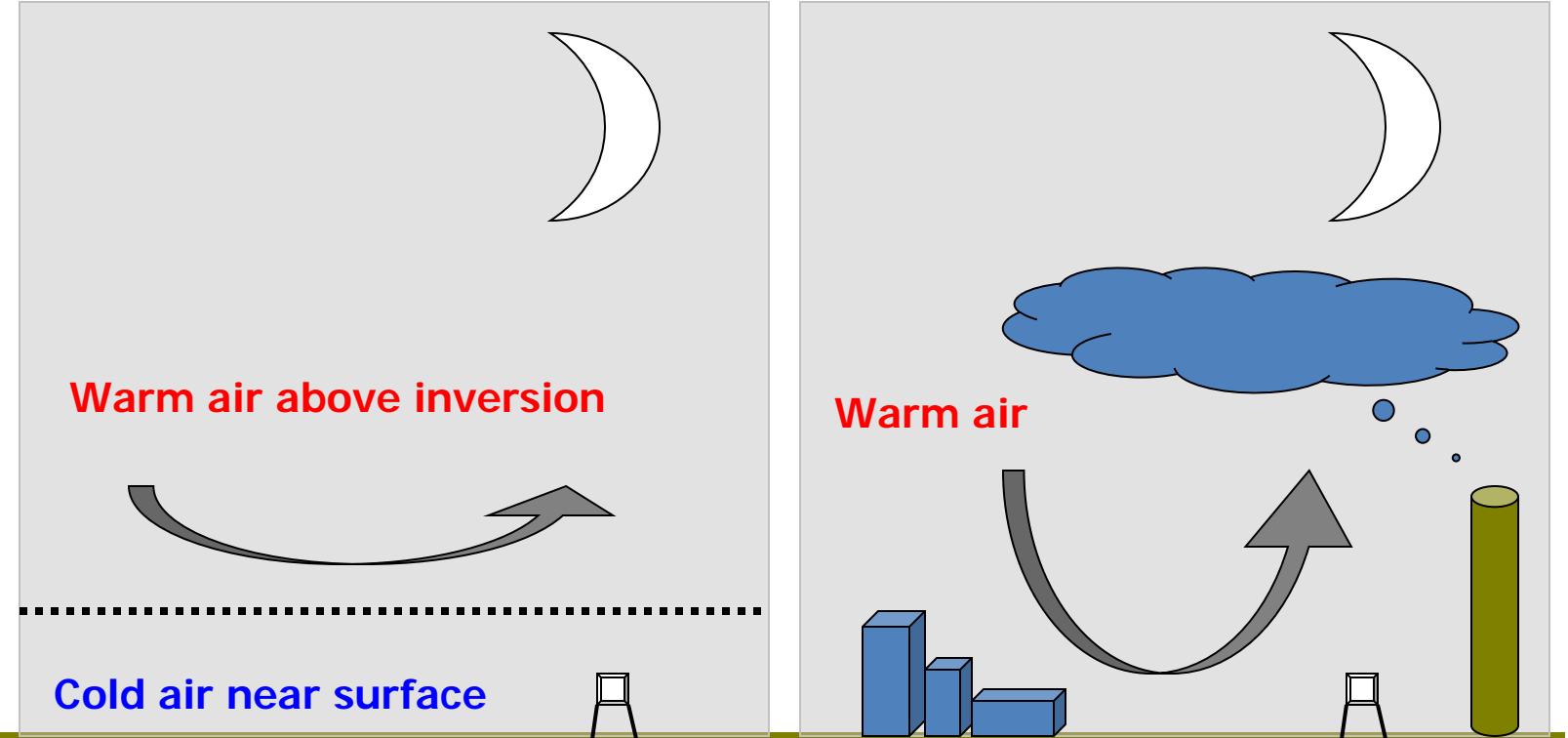
(First received 23 February 1993 and in final form 24 August 1993)

Abstract—High-resolution temperature profile data collected by balloon-borne ascents from 1977 to 1983 were analysed to determine mixing heights and ground-based inversion depths. Early morning ground-based inversions occurred with a frequency ranging from 44% in spring to 88% in fall. Median depths of early morning ground-based inversions were found to range from 315 m in the spring to 414 m in the summer, fall and winter seasons, with median potential temperature gradients of 0.016, 0.021, 0.026 and $0.030^{\circ}\text{C m}^{-1}$, respectively. Quartile deviations of ground-based inversion depths and strengths were about 30% of median values. Median mixing heights at solar noon in the spring, summer, fall and winter were 683, 659, 381 and 162 m, respectively. The kink method gives consistently lower values of mixing heights than the Holzworth and capping methods for all seasons and times of day. Mixing heights determined from these data were generally lower than those estimated from rawinsonde data in earlier studies.



Night Surface Temp

Slide Courtesy of Professor John Christy (March 27, 2019)



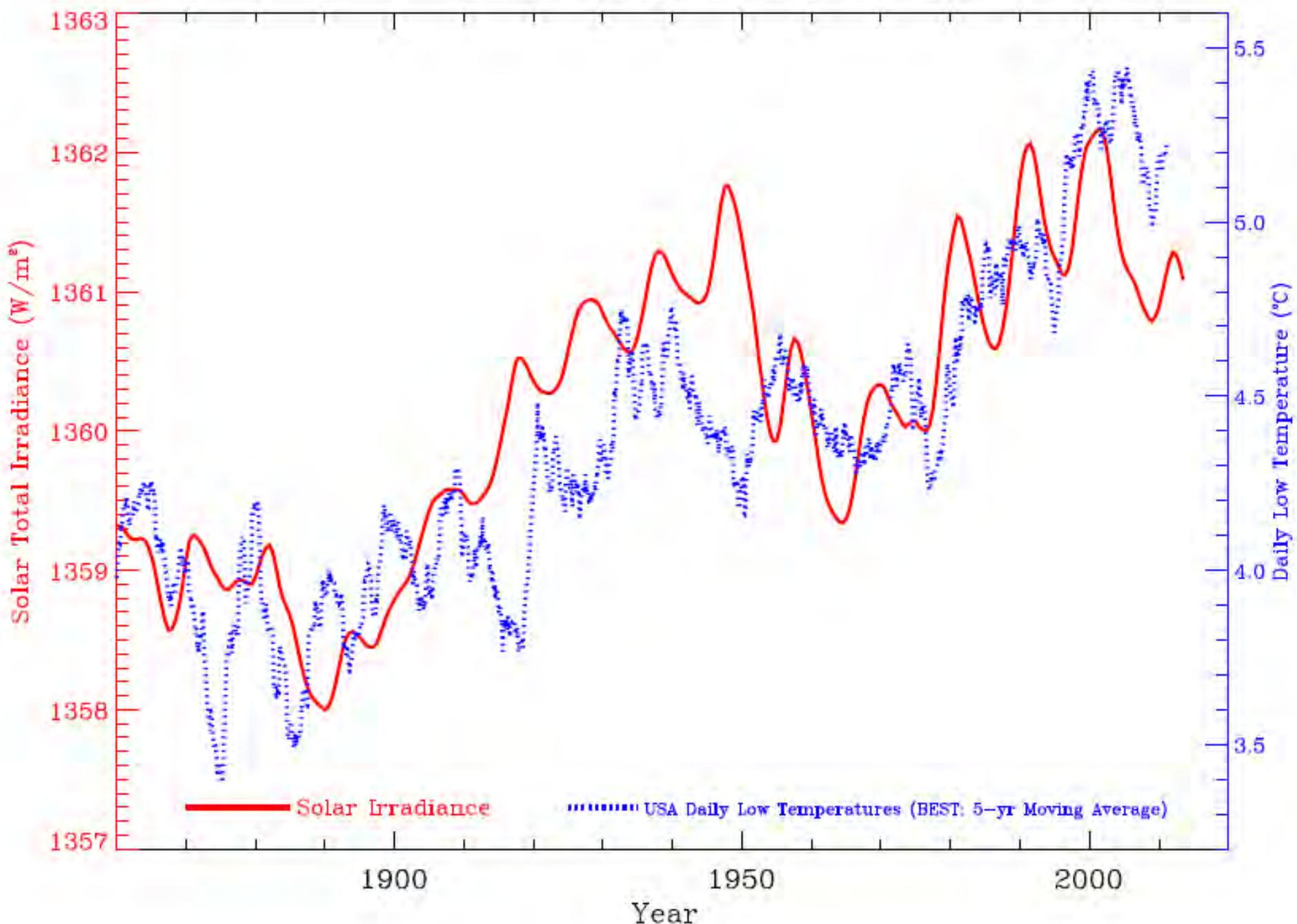
Nighttime - disconnected shallow layer/inversion. But this situation can be sensitive to small changes such as roughness or heat sources.

Buildings, heat releasing surfaces, aerosols, greenhouse gases, etc. can disrupt the delicate inversion, mixing warm air downward - affecting TMin.

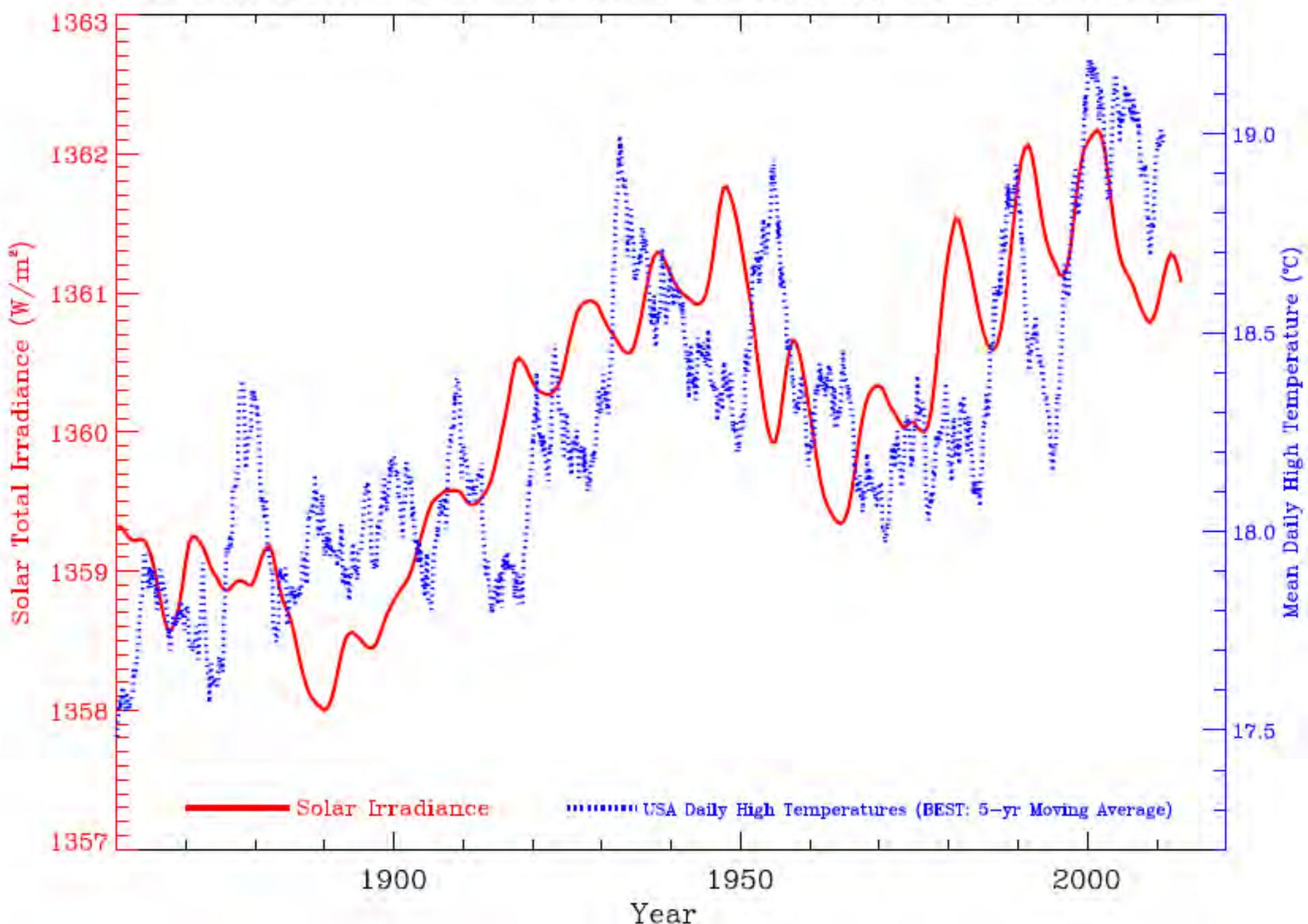
This is why we need to select
only daily high temperature
or T_{\max} for studying
Solar+CO₂ relations
to climate

**The Sun loves USA+Canada?
(update of BEST database since 2011)**

No Sun-USA Daily Low Temperature Link?



A Connection Between Solar Irradiance and Daily High Temperature of USA ?





What about the Sun in Canada?

A quiz: What is the average
temperature of Canada?

Answer: The average temperature of Canada is

$$T_{\text{mean}} = -4.92 \pm 0.18^{\circ}\text{C}$$

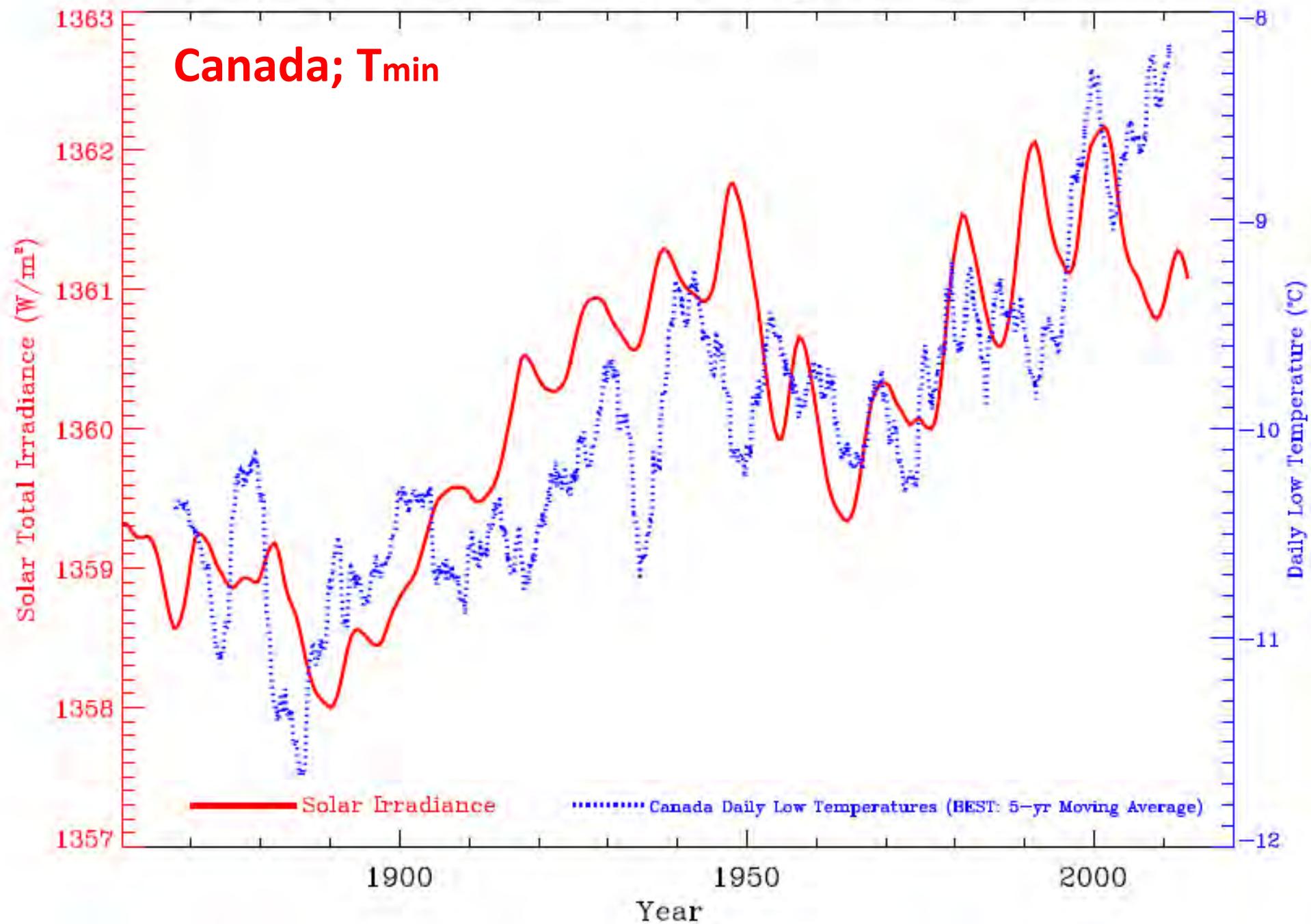
$$T_{\text{max}} = 0.21 \pm 0.15^{\circ}\text{C}$$

$$T_{\text{min}} = -9.85 \pm 0.34^{\circ}\text{C}$$

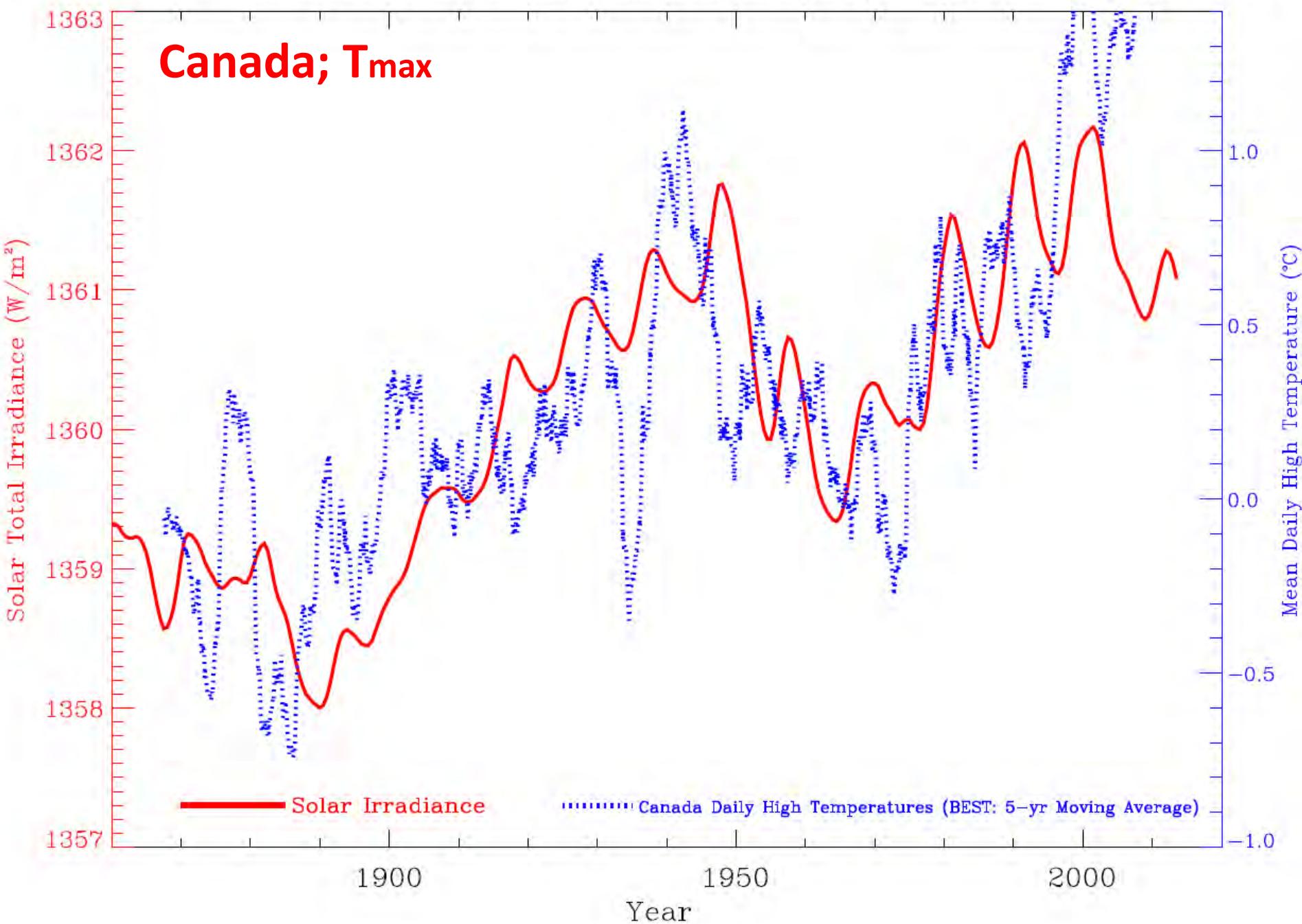
(1951-1980 climatological average)

Yes Canada is a **very cold country**

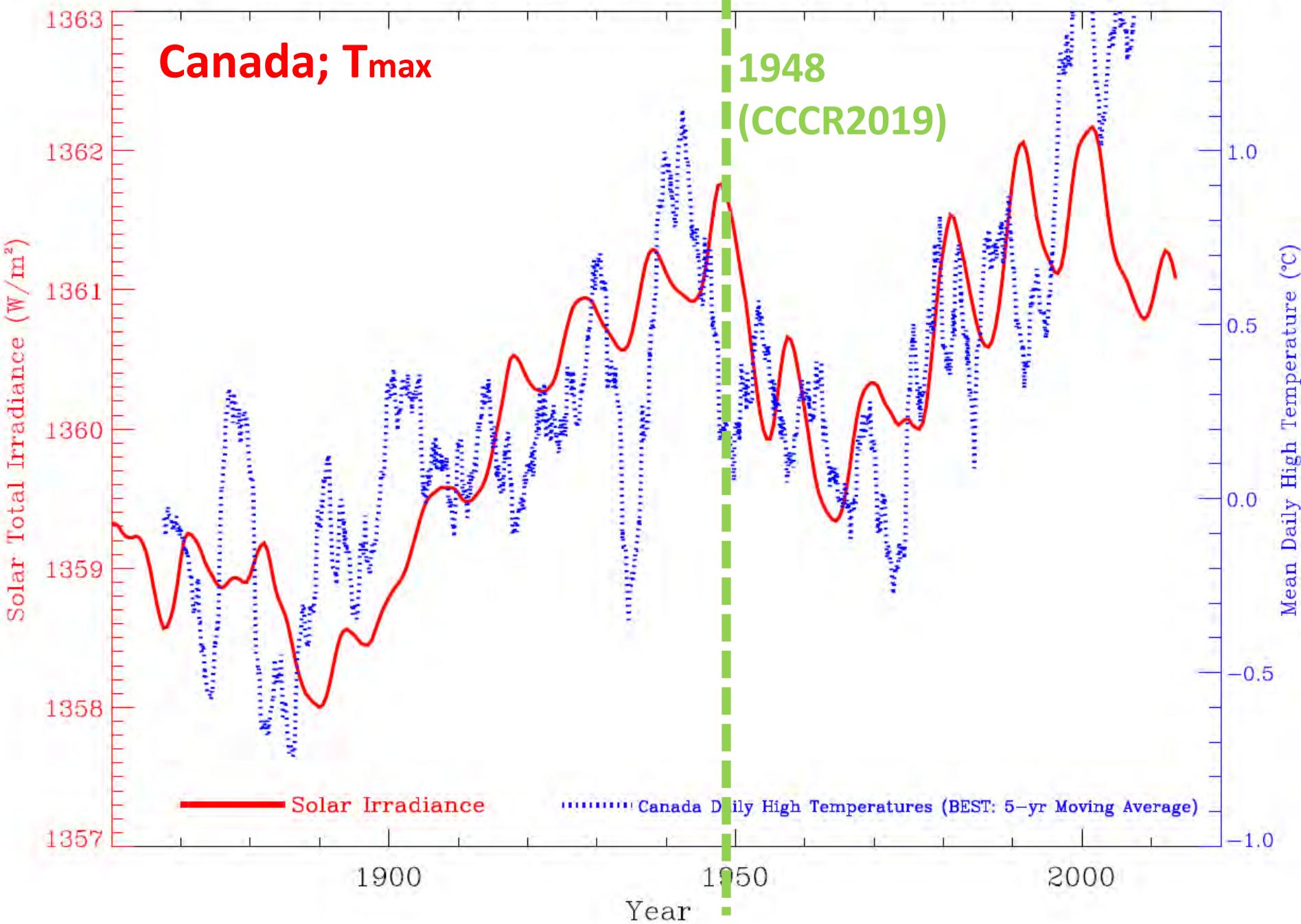
No Sun-Canada Daily Low Temperature Link?



A Connection Between Solar Irradiance and Daily High Temperature of Canada ?



A Connection Between Solar Irradiance and Daily High Temperature of Canada ?



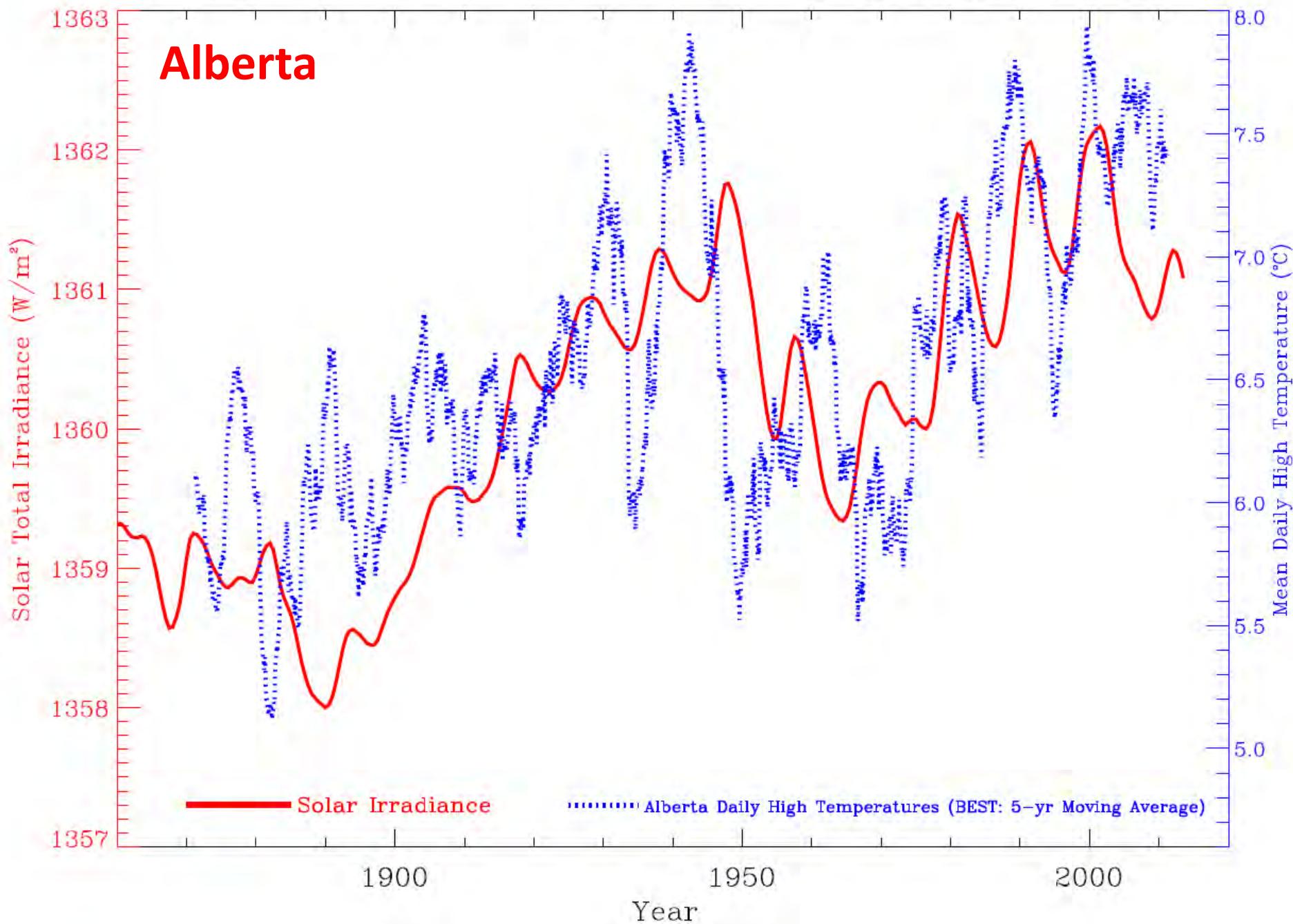


DeepDream Artificial Neural Network Van Gogh's Starry Night Style (courtesy of E. Camporeale, July 13, 2018)

What about regional details in Canada?

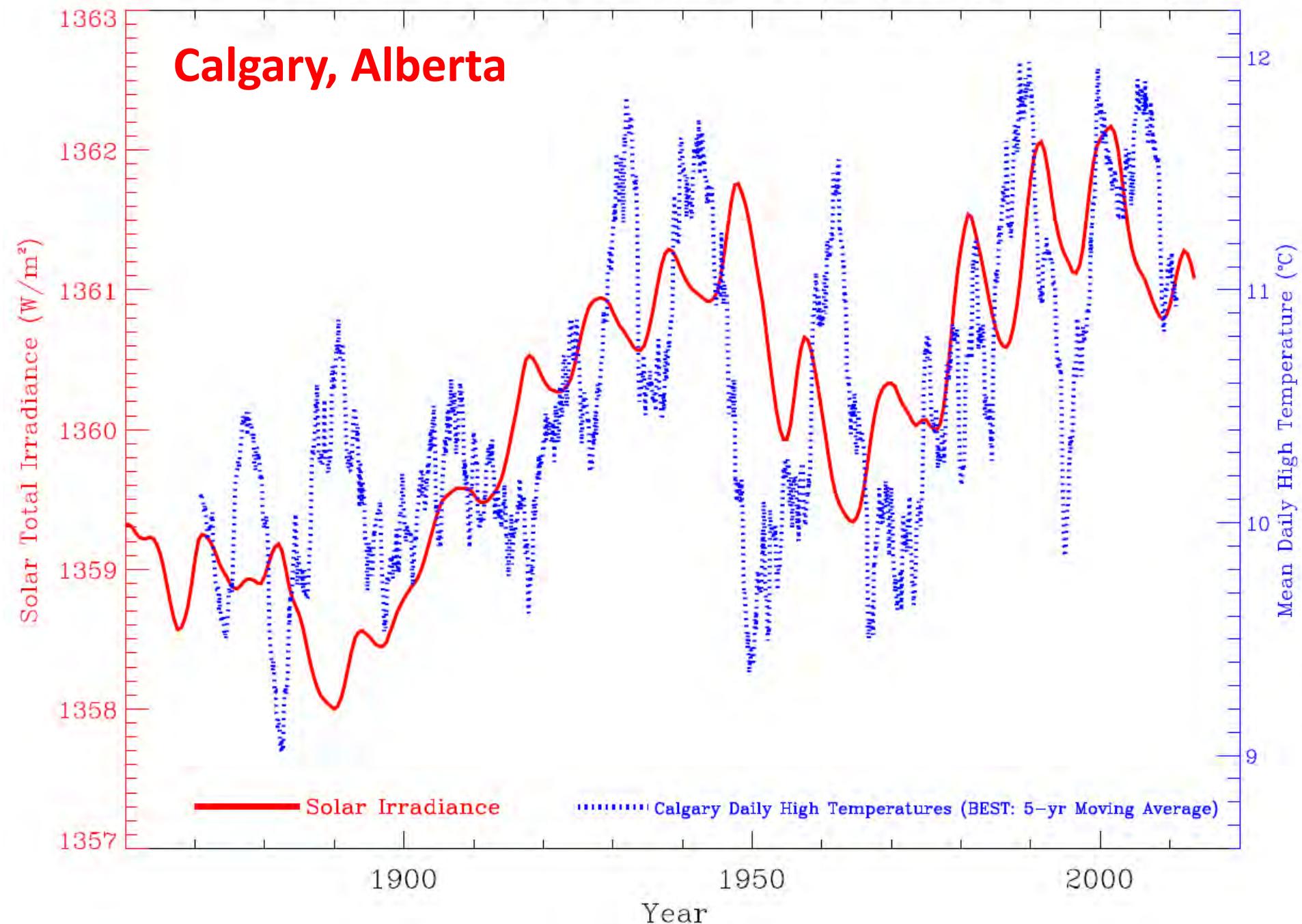
Stick to Daily High Temperature
as the metric for Sun's role?

A Connection Between Solar Irradiance and Daily High Temperature of Alberta ?

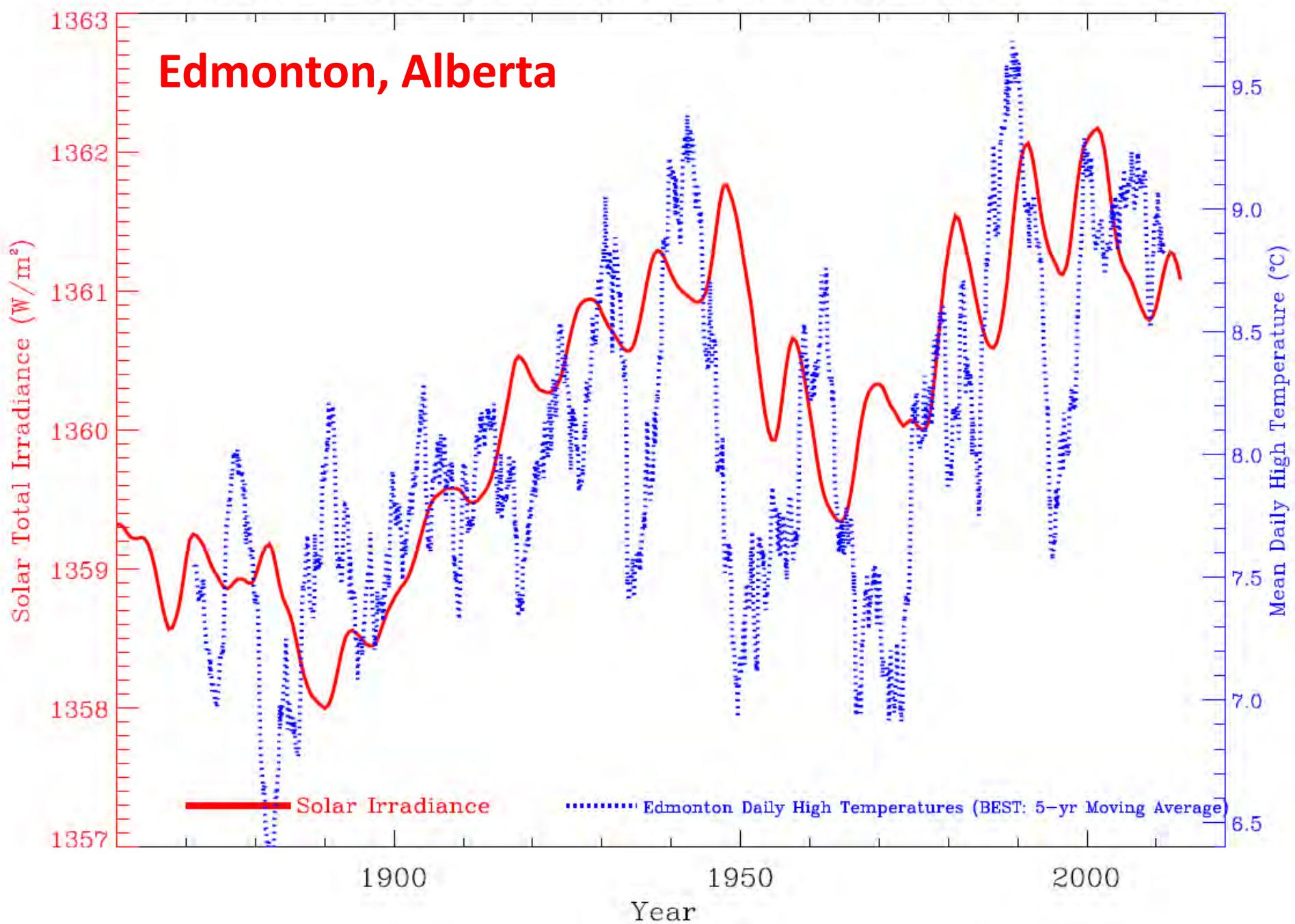


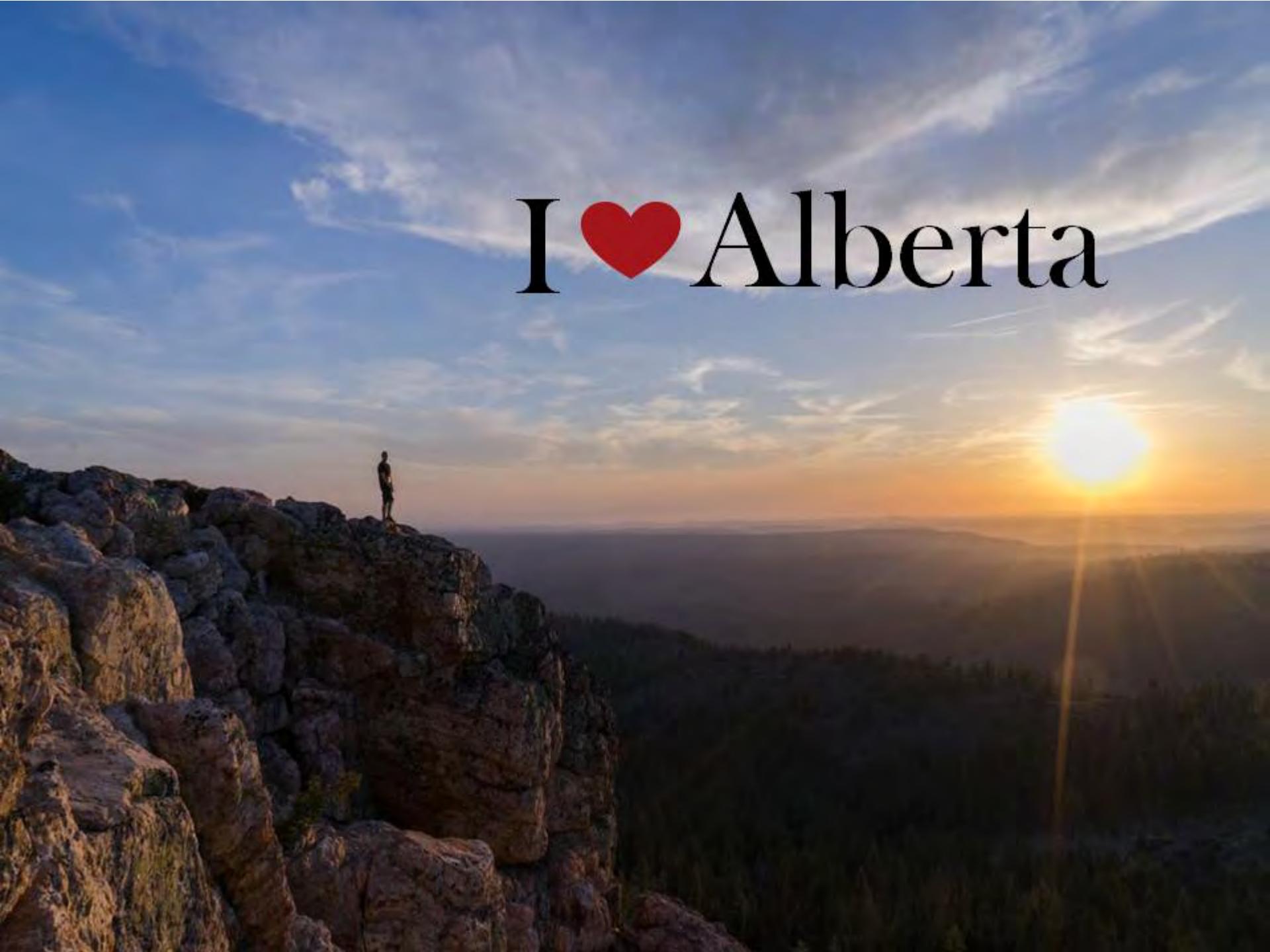
A Connection Between Solar Irradiance and Daily High Temperature Calgary ?

Calgary, Alberta



A Connection Between Solar Irradiance and Daily High Temperature Edmonton ?

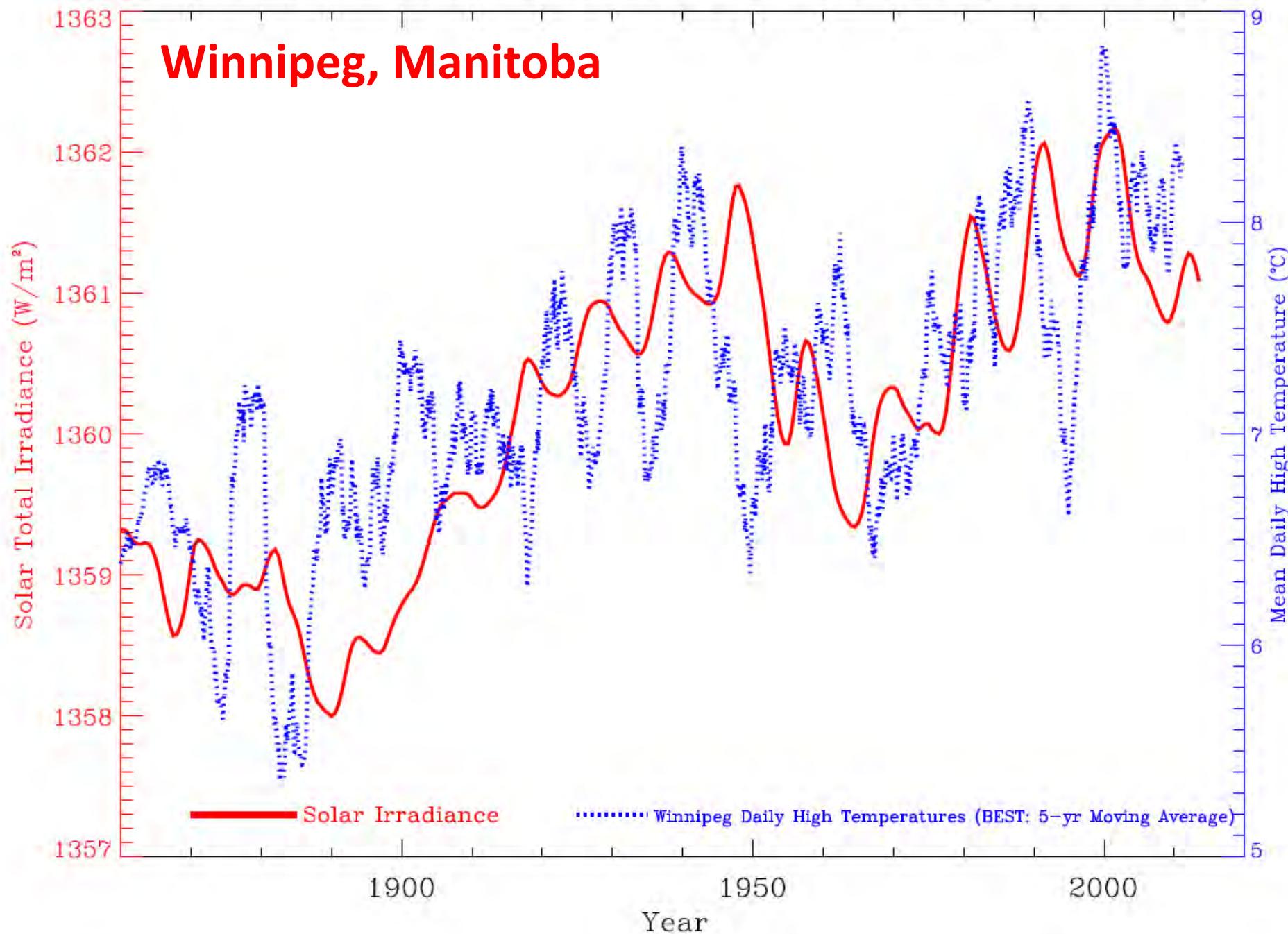


A photograph of a person standing on a rocky mountain peak at sunset. The sky is filled with warm, orange and yellow hues from the setting sun on the right. The foreground is dominated by rugged, light-colored rock formations. In the distance, a dark forested area stretches towards the horizon. The text "I ❤️ Alberta" is overlaid in the upper right quadrant.

I ❤️ Alberta

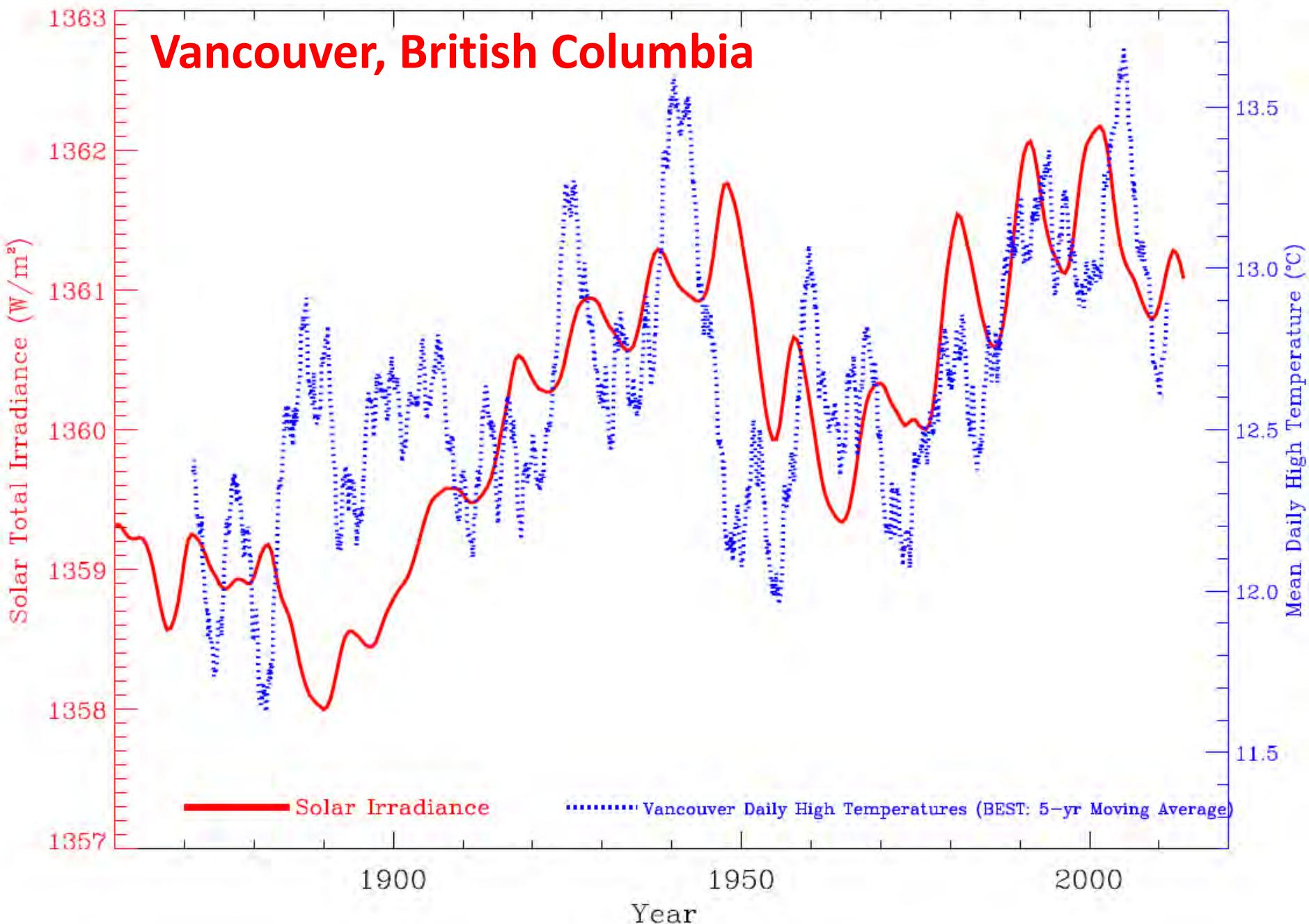
More sun-climate relations
in Canada?

A Connection Between Solar Irradiance and Daily High Temperature Winnipeg ?



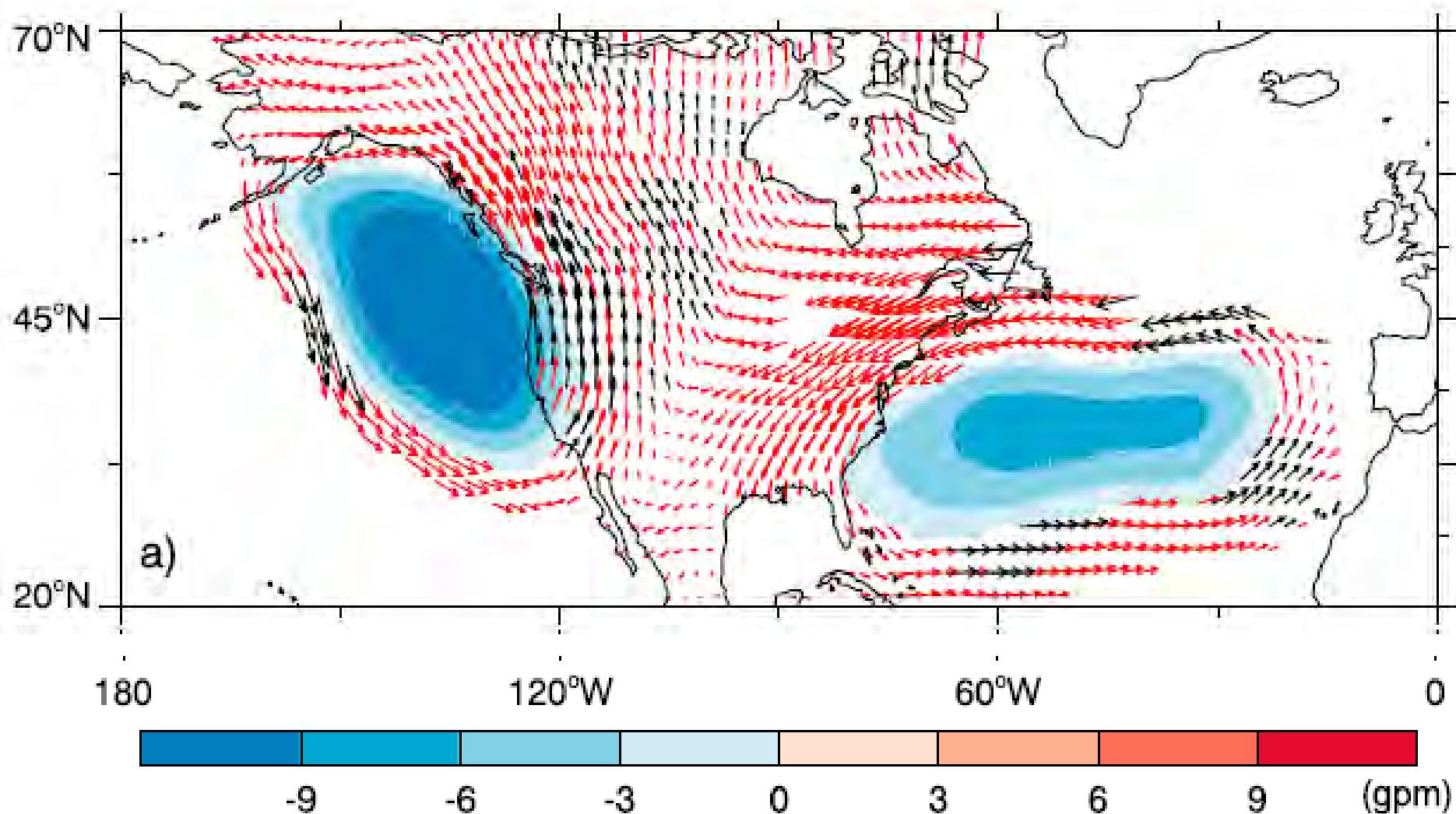
A Connection Between Solar Irradiance and Daily High Temperature Vancouver ?

Vancouver, British Columbia

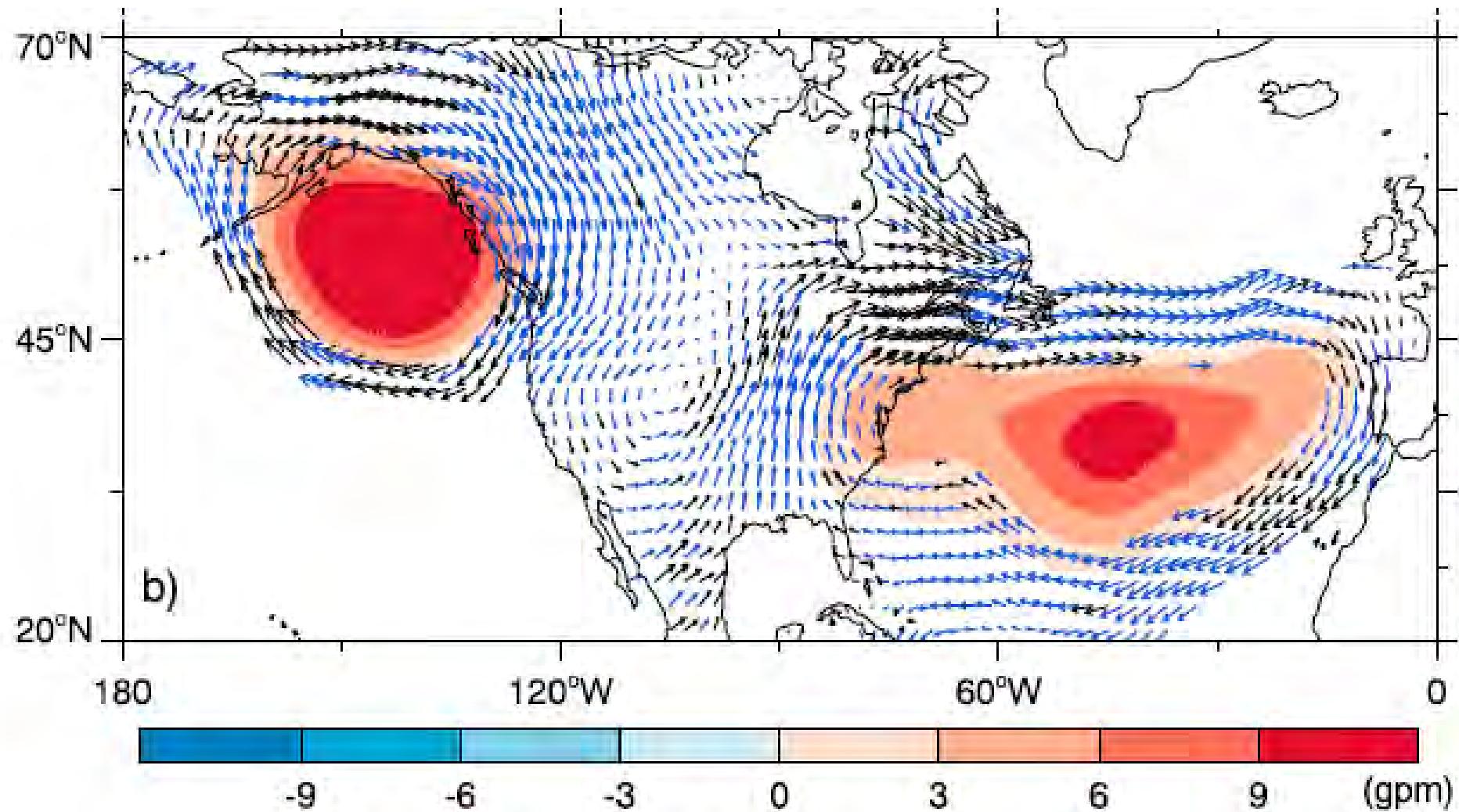


The meteorological
perspective/explanation?

Solar Multidecadal Warm-Cold Modulation: Warm Phase



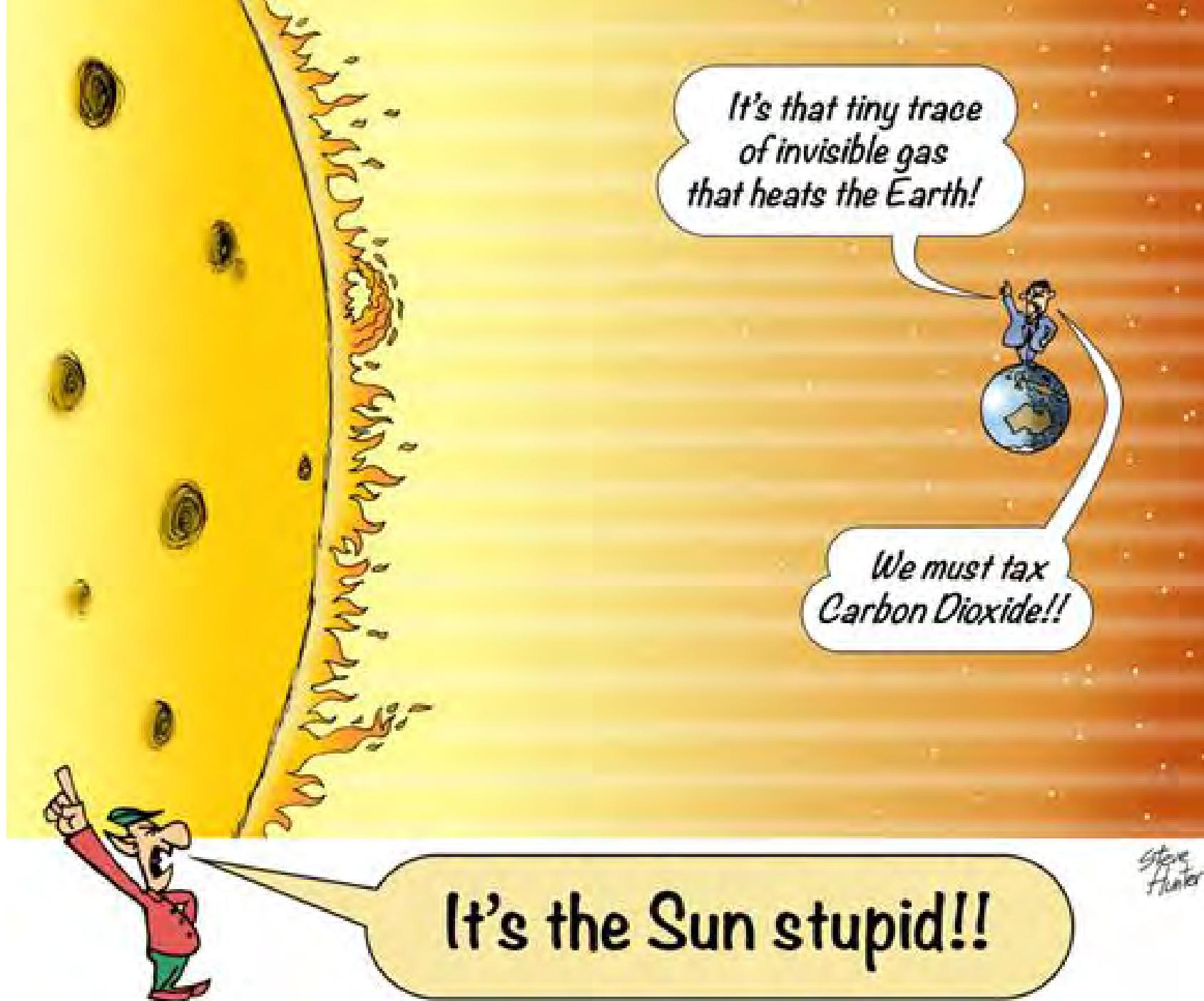
Solar Multidecadal Warm-Cold Modulation: Cold Phase



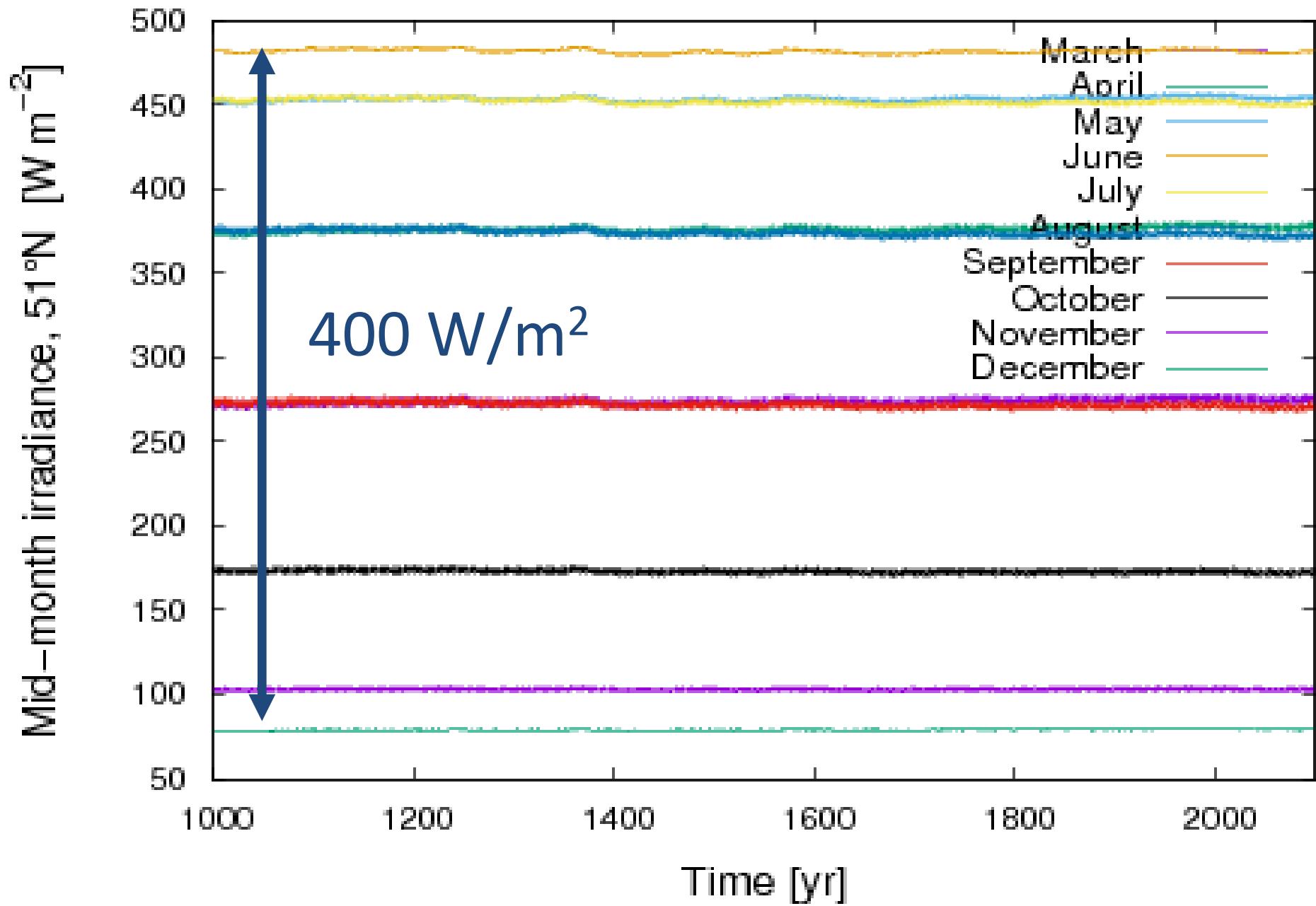
“no way to tax the Sun”

“After many studies and an in-depth research project by ‘top minds’ in climate catastrophe studies, it was determined there is no way to tax the Sun. So the Sun is completely ruled out as a cause of climate change.”

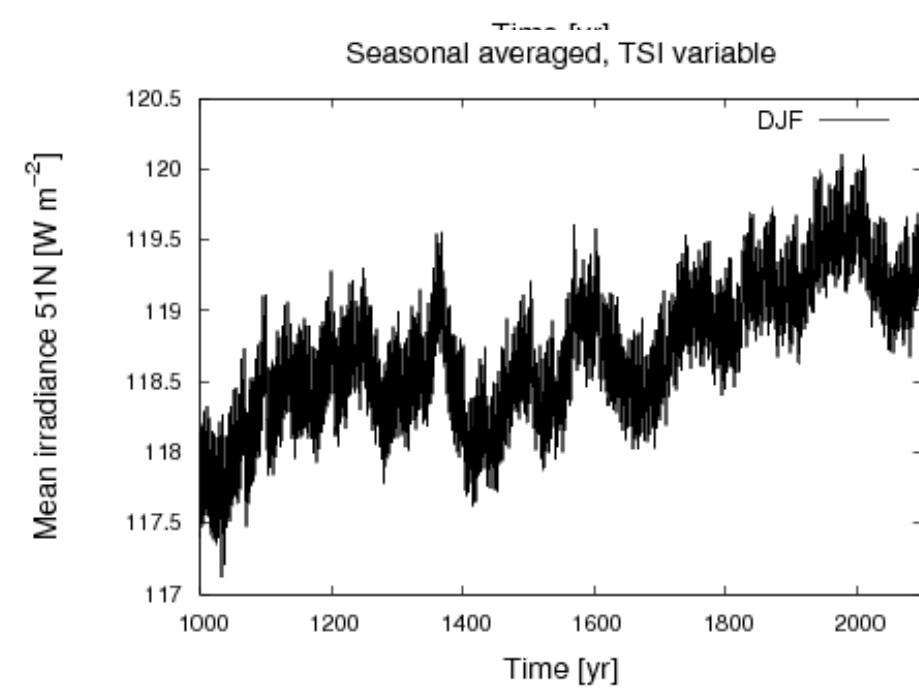
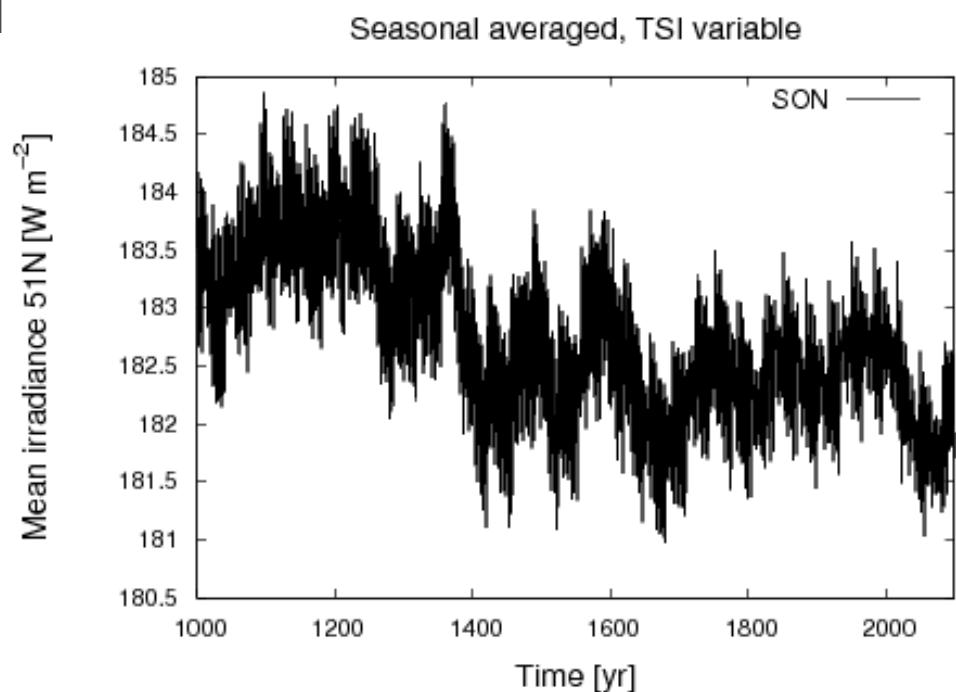
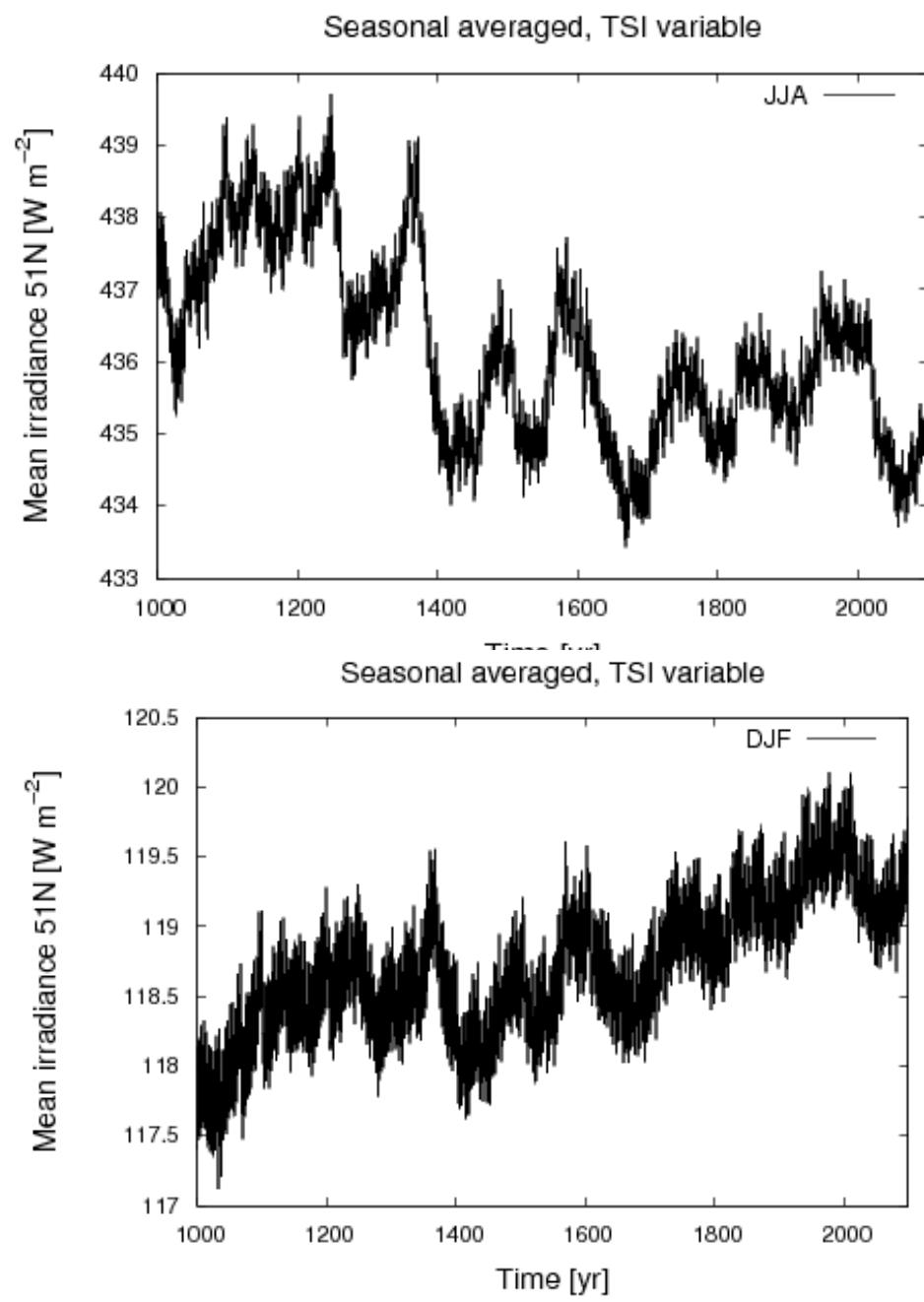
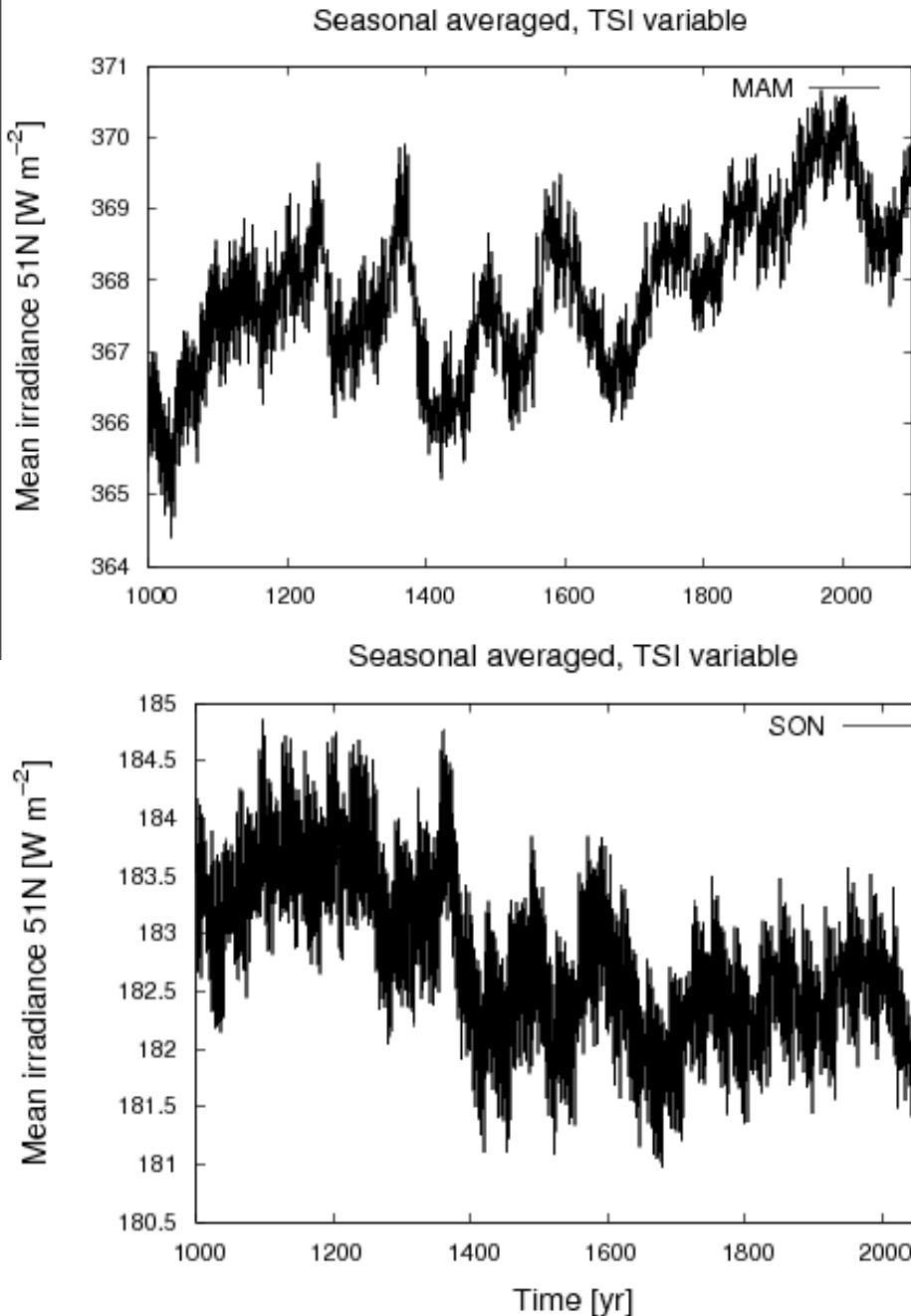
—Russ R. December 2, 2018 (WUWT)



The Sun never sleep (even during the night)

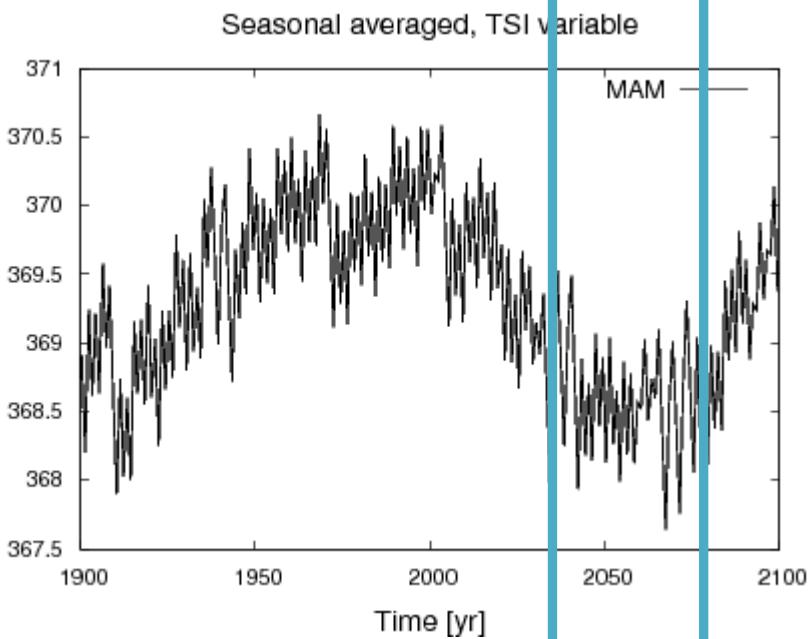


The Sun never sleep (even during the night)

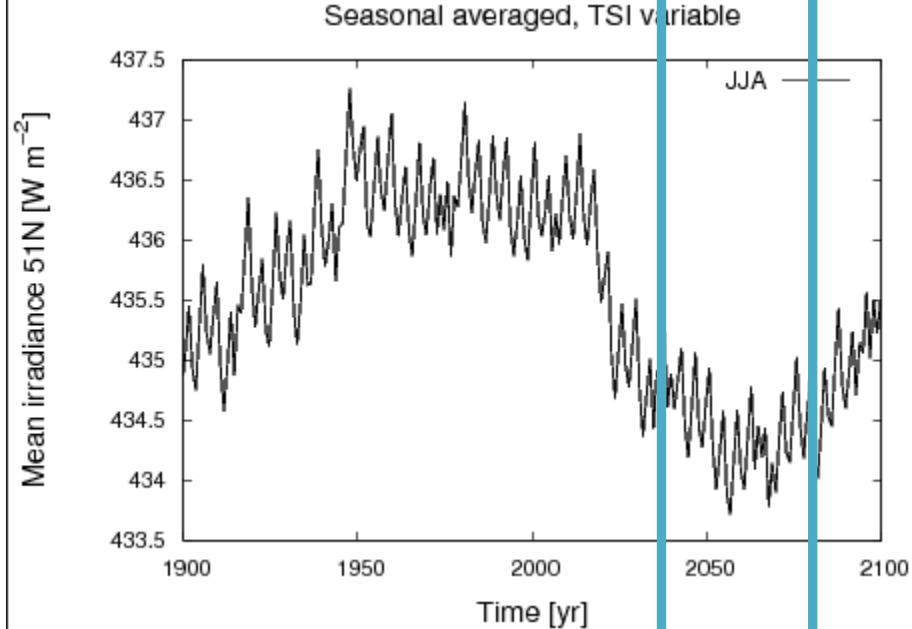


The Sun never sleep: The next 100 years for Calgary?

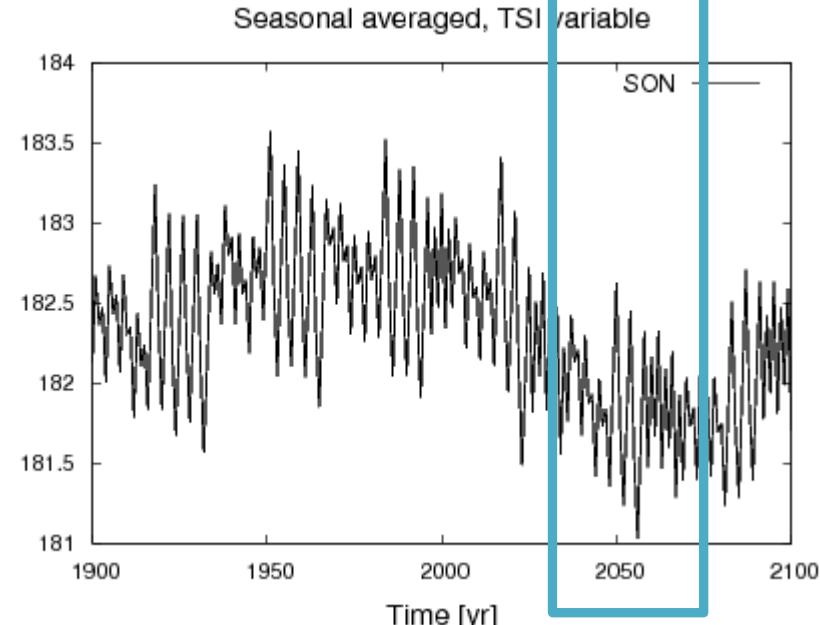
Mean irradiance $51N [W m^{-2}]$



Mean irradiance $51N [W m^{-2}]$



Mean irradiance $51N [W m^{-2}]$



Mean irradiance $51N [W m^{-2}]$

