Some Models Based on Natural Cycles Versus The Failed IPCC Models

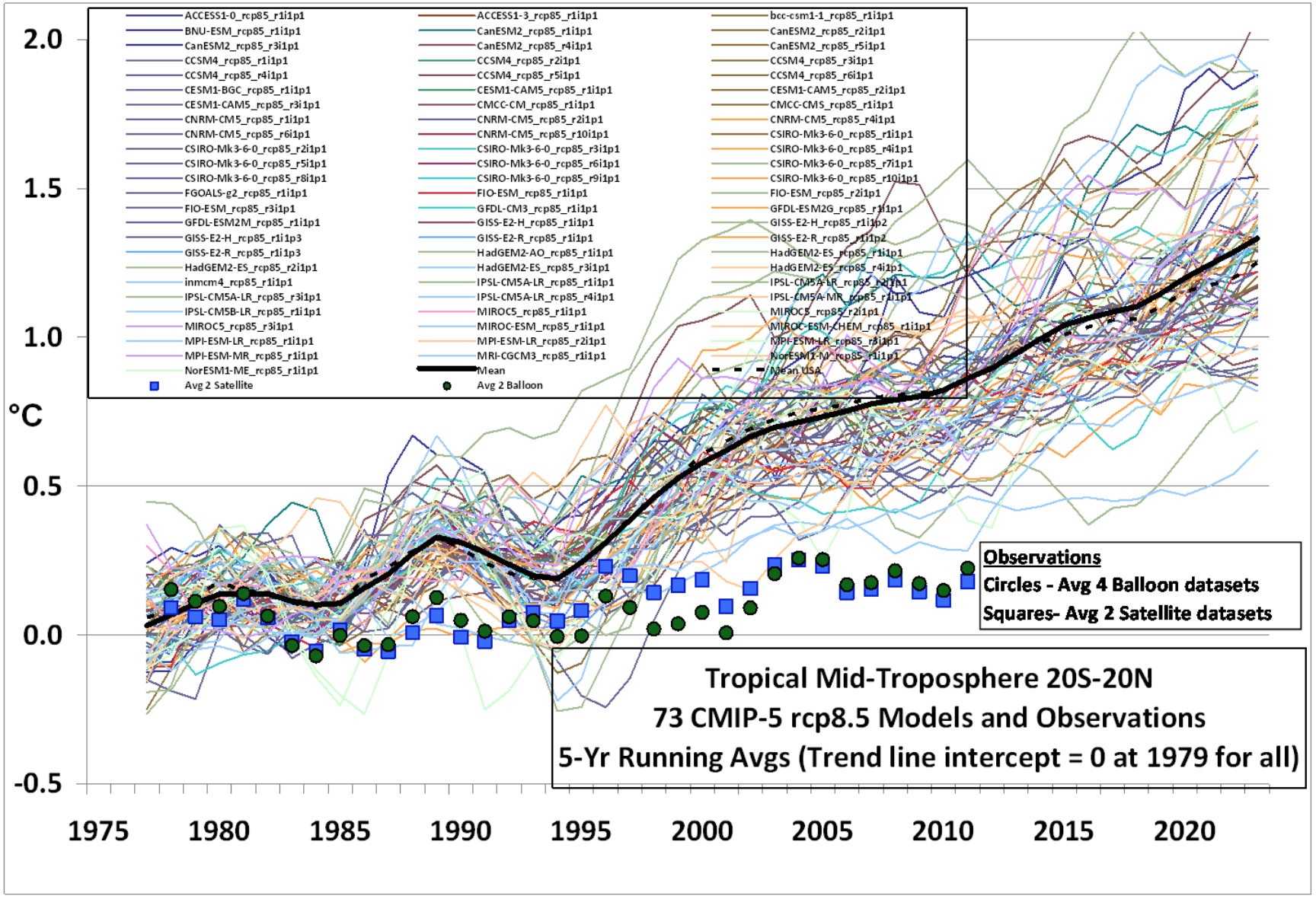
Before facing major surgery, wouldn't you want a second opinion?
When a nation faces an important decision that risks its economic future, or perhaps the fate of the ecology, it should do the same.
Fred Singer

Bernie McCune

May 20, 2017

Model Basis

- IPCC Models are based on a feedback theory of warming caused mainly by CO_2 as it affects water vapor using complex parameterizations
- There are now a number of simple models that use real data from nature to show various lengths of cyclical patterns having warming and cooling parts of the cycles
- Over the past couple of decades the CO_2 based IPCC models have failed by showing a continuing warming trend that is not reflected in the actual temperature data plots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CCSM4_rcp85_r5i1p1
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CESM1-BGC_rcp85_r1i1p1
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CSIRO-Mk3-6-0_rcp85_r10i1p1
FGOALS-g2_rcp85_r1i1p1
FIO-ESM_rcp85_r1i1p1
FIO-ESM_rcp85_r2i1p1
FIO-ESM_rcp85_r3i1p1
GFDL-CM3_rcp85_r1i1p1
GFDL-ESM2G_rcp85_r1i1p1
GFDL-ESM2M_rcp85_r1i1p1
GISS-E2-H_rcp85_r1i1p1
GISS-E2-H_rcp85_r1i1p2
GISS-E2-H_rcp85_r1i1p3
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GISS-E2-R_rcp85_r1i1p2
GISS-E2-R_rcp85_r1i1p3
HadGEM2-AO_rcp85_r1i1p1
HadGEM2-ES_rcp85_r1i1p1
HadGEM2-ES_rcp85_r2i1p1
HadGEM2-ES_rcp85_r3i1p1
HadGEM2-ES_rcp85_r4i1p1
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IPSL-CM5A-LR_rcp85_r2i1p1
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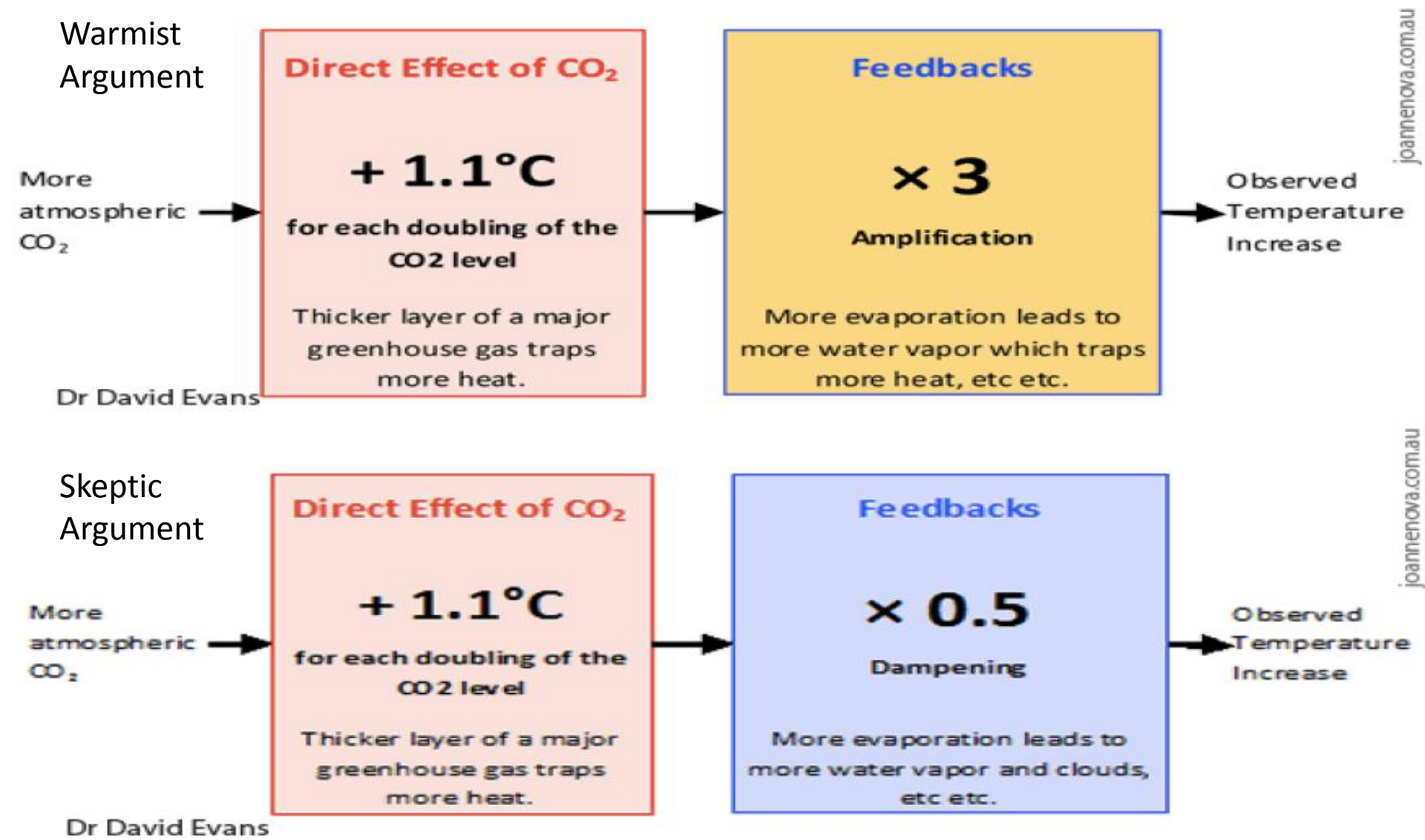
IPSL-CM5A-MR_rcp85_r1i1p1
IPSL-CM5B-LR_rcp85_r1i1p1
MIROC5_rcp85_r1i1p1
MIROC5_rcp85_r2i1p1
MIROC5_rcp85_r3i1p1
MIROC-ESM_rcp85_r1i1p1
MIROC-ESM-CHEM_rcp85_r1i1p1
MPI-ESM-LR_rcp85_r1i1p1
MPI-ESM-LR_rcp85_r2i1p1
MPI-ESM-LR_rcp85_r3i1p1
MPI-ESM-MR_rcp85_r1i1p1
MRI-CGCM3_rcp85_r1i1p1
NorESM1-M_rcp85_r1i1p1
NorESM1-ME_rcp85_r1i1p1
Mean
Mean USA
Avg 2 Satellite
Avg 2 Balloon
2.0
1.5
1.0
0.5
0.0
-0.5
°C
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
Observations
Circles - Avg 4 Balloon datasets
Squares- Avg 2 Satellite datasets
Tropical Mid-Troposphere 20S-20N
73 CMIP-5 rcp8.5 Models and Observations
5-Yr Running Avgs (Trend line intercept = 0 at 1979 for all)

Human produced CO_2 is the cause of catastrophic warming (T or F?)

- Not only is the theory of any type of atmospheric CO_2 causing catastrophic warming wrong but the theory of human produced CO_2 warming (a subset) must also be of little consequence
- A growing body of data indicates that sensitivity to warming of a doubling of concentration of CO_2 in the atmosphere is likely to be less than 1° C
- Lindzen questions the negligible effect of any non water based GHGs that might cause an increase of a few watts per square meter when atmospheric moisture can decrease incoming solar energy by a 100 watts per square meter or more (classic negative feed back)

David Evan's Simple Comparison



Common Sense View

- It is true that with cloud cover at night here in the desert SW especially in the winter, we find that surface temperatures tend to be much warmer
- Even with present “high” atmospheric CO_2 concentrations at night here in Las Cruces, surface temperatures plummet when there is no moisture in our atmosphere
- However, in the daytime clouds and moisture have multiple times the effect on reducing surface temperatures than CO_2 does on increasing surface temperatures

New Models based on Data

- Over the past couple of decades the analysis of long term data has shown that there are natural cycles that apparently drive surface and ocean temperature variations
- None of these variations show any long term warming trends
- They are actually cyclical over a variety of periods
- Three cycles seemed to have now emerged from what had seemed to be a chaotic jumble

1000, 200 and 60 Year Cycles

- For near term correlation (100s of years of temperature evidence), these cycles as they interact with each other tend to follow the actual temperature variations
- Our own group members have recognized the 60 and 1000 year patterns
- A clear solar 200 year pattern also exists
- It seems obvious that the sun drives all these patterns in some way

Models based on one or more of these natural cycles

- David Evans' Alarmist vs. Skeptic calculation
- Girma Orsengo's simple 60 year cycle model
- Ed Caryl's Xcell model using all three patterns
- Ex NASA Team's similar 2 pattern model
- Lord Moncton's Model using IPCC parameters but with different values

Glacial Periods - some questions

- I am not exploring longer term and much colder climate change in this presentation
- But the question arises – what causes them and why for the past several million years have they occurred like clock work?
- Glacials and inter-glacials over periods of 100 K years with brief 8 to 10 K year warming periods are clearly shown in the geological record
- Why are glacial periods 10 to 20 deg C colder?

And the BIG questions?????

Is the next one now on its way?

Say . . . . . in the next couple of hundred years or less?

Gist of the Difference

- Alarmists note that an increase of atmospheric CO_2 (about 120 ppm) in the past almost 80 years is causing an increase in global temperature
- Skeptics mostly agree that there may be some increase but the data shows only about 0.6 to 0.8 deg C increase from all causes
- With a doubling of CO_2 in the next 60 years, alarmists claim that temperatures could increase from somewhere between 2 to 8 degrees C

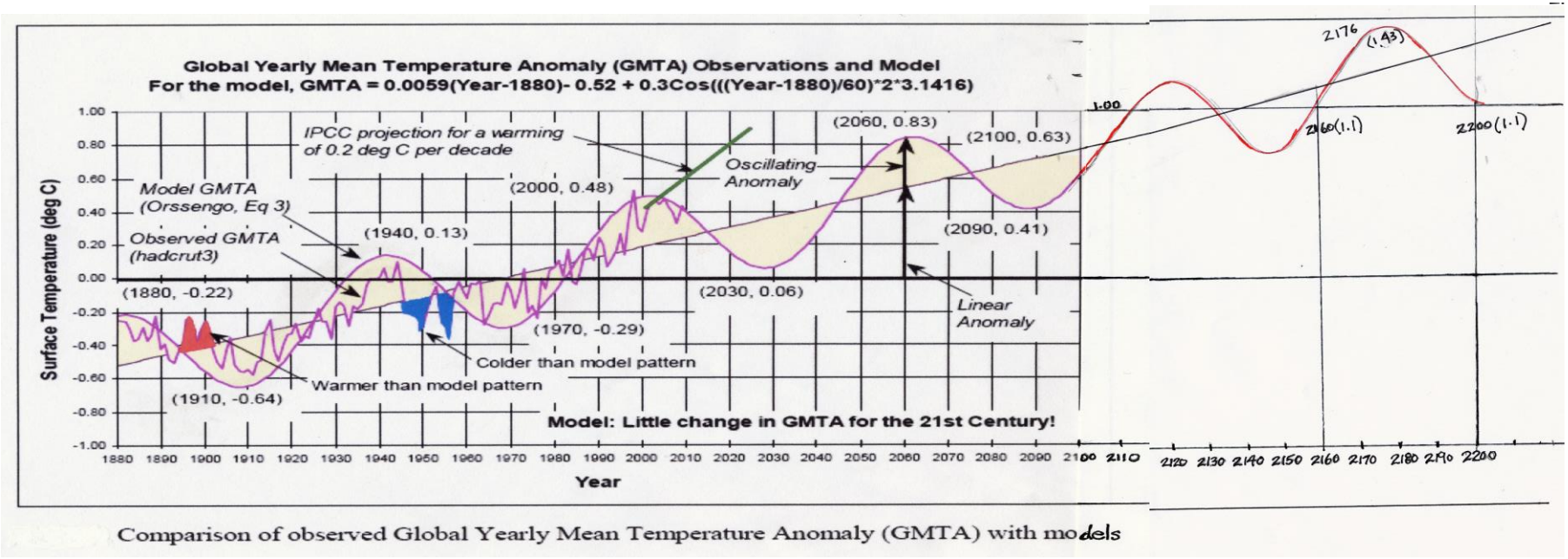
The Real Problem For the Alarmists

- Their proof is based on several flawed assumptions

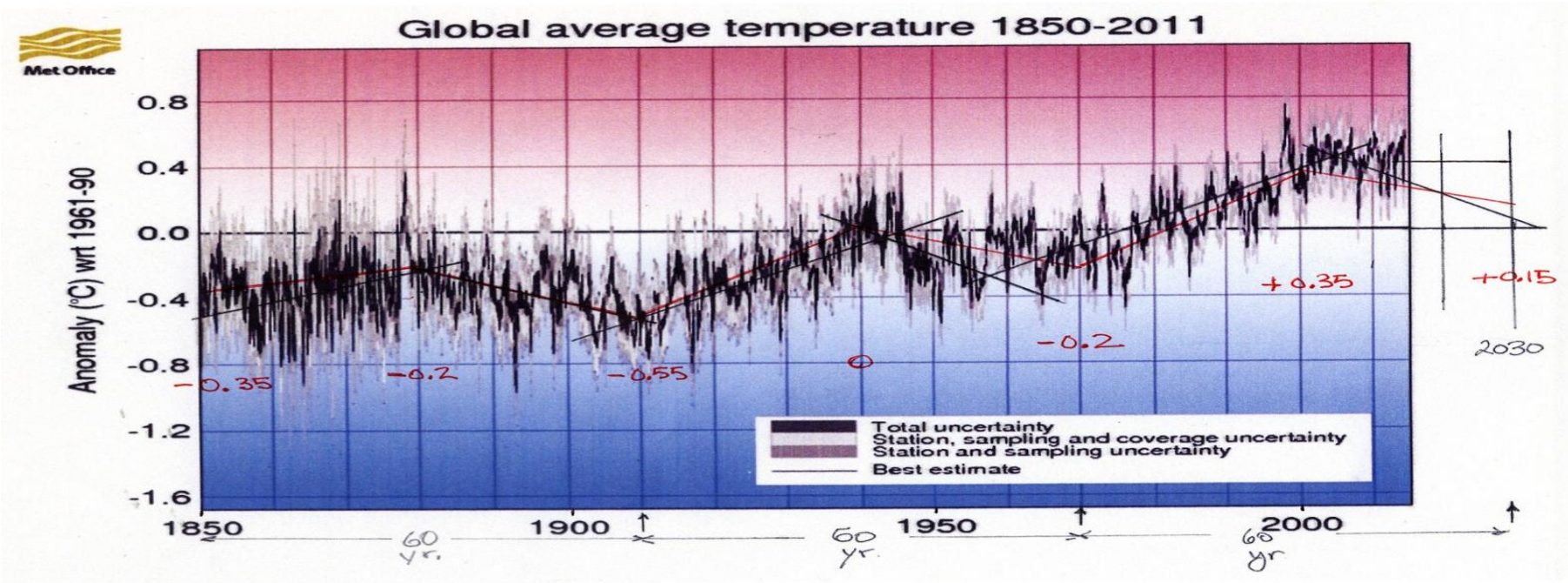
  -That increasing volume of human produced CO_2 will increase the annual rate of CO_2 entering the atmosphere (as much as 5.5 ppm/yr)

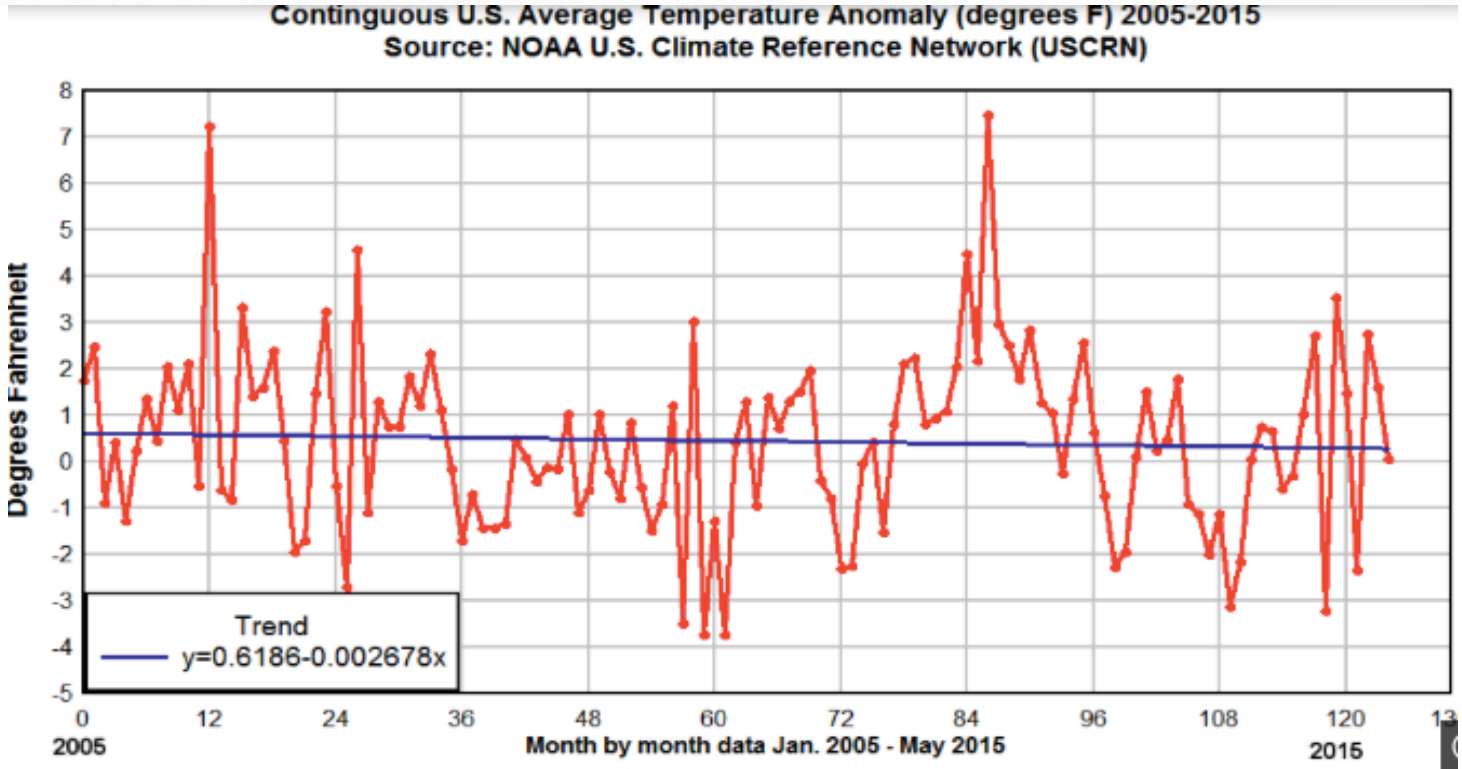
  - Causing global temperatures to rise
- The data, so far, does not support their theory
- The annual rates of increase over the past several decades basically have averaged less than 2 ppm/yr and the global temperatures are not increasing at the rate that their models predict

Girma's Graph Extended



Comparison of observed Global Yearly Mean Temperature Anomaly (GMTA) with models

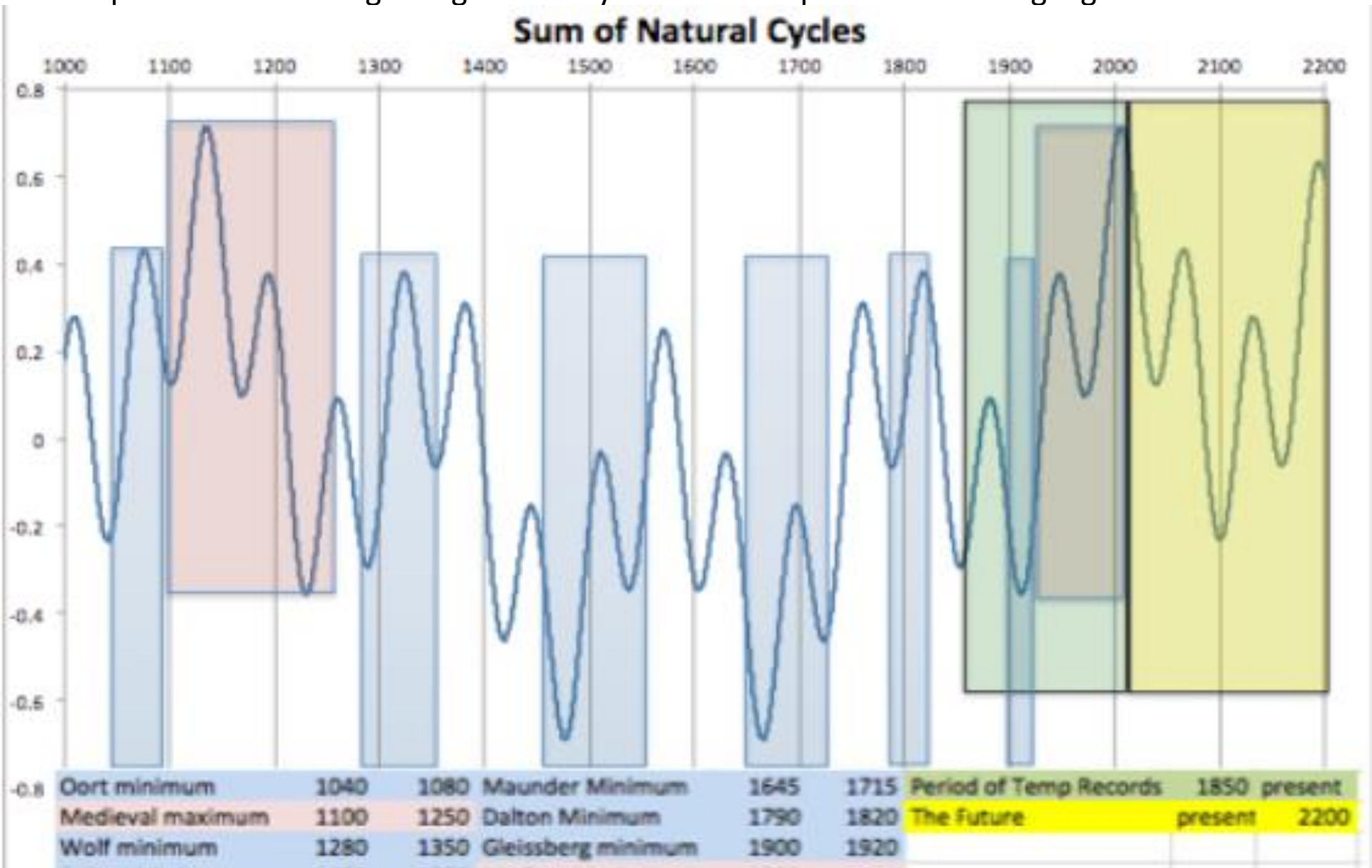

Met Office
Global average temperature 1850-2011
Anomaly (°C) wrt 1961-90
0.8
0.4
0.0
-0.4
-0.8
-1.2
-1.6
1850
1900
1950
2000
60 yr.
60 yr
60 yr
-0.35
-0.2
-0.55
0
-0.2
+0.35
+0.15
2030
Total uncertainty
Station, sampling and coverage uncertainty
Station and sampling uncertainty
Best estimate

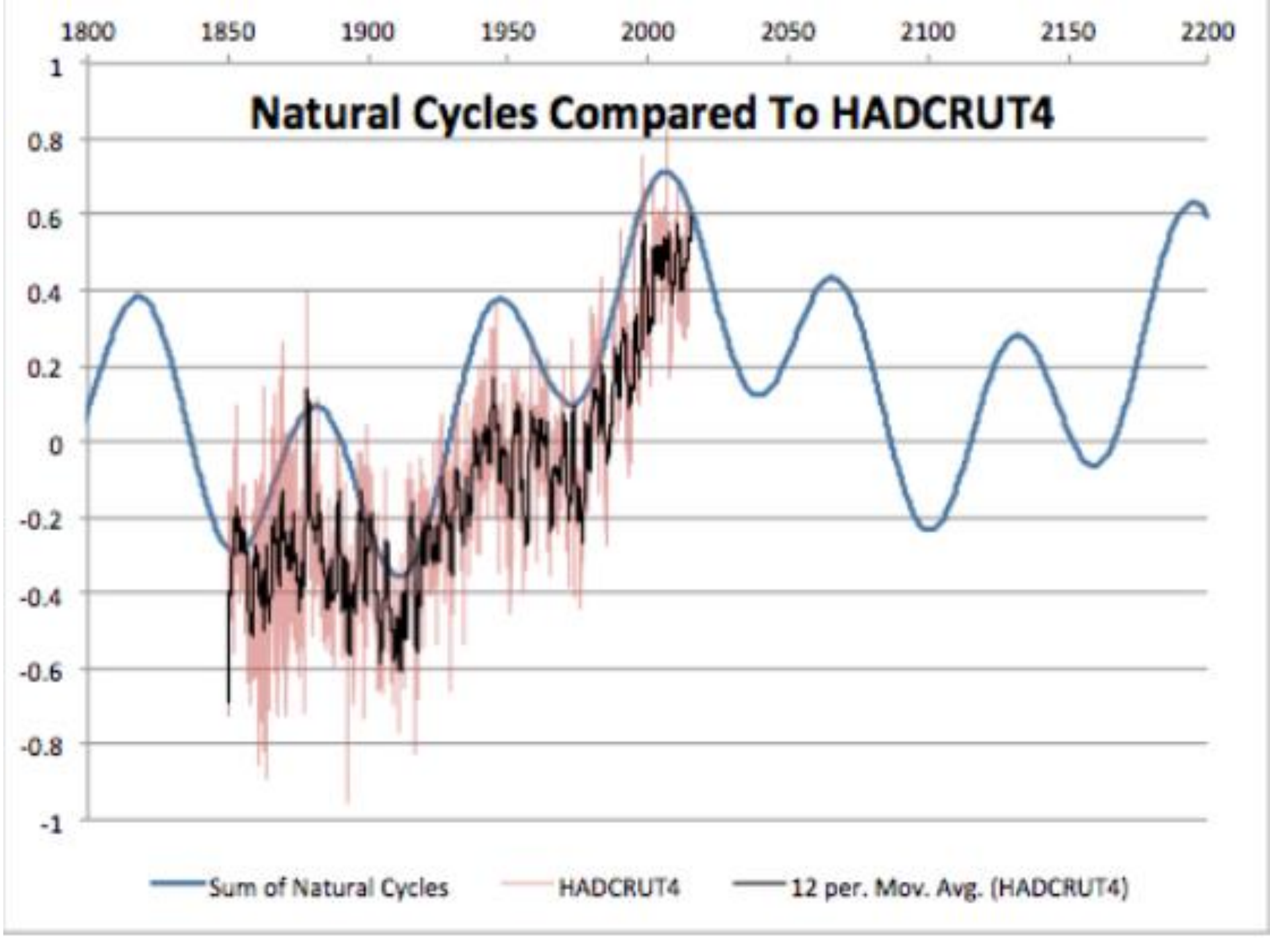

Contiguous U.S. Average Temperature Anomaly (degrees F) 2005-2015
Source: NOAA U.S. Climate Reference Network (USCRN)
Degrees Fahrenheit
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
Trend
y=0.6186-0.002678x
0
12
24
36
48
60
72
84
96
108
120
2005
Month by month data Jan. 2005 - May 2015
2015

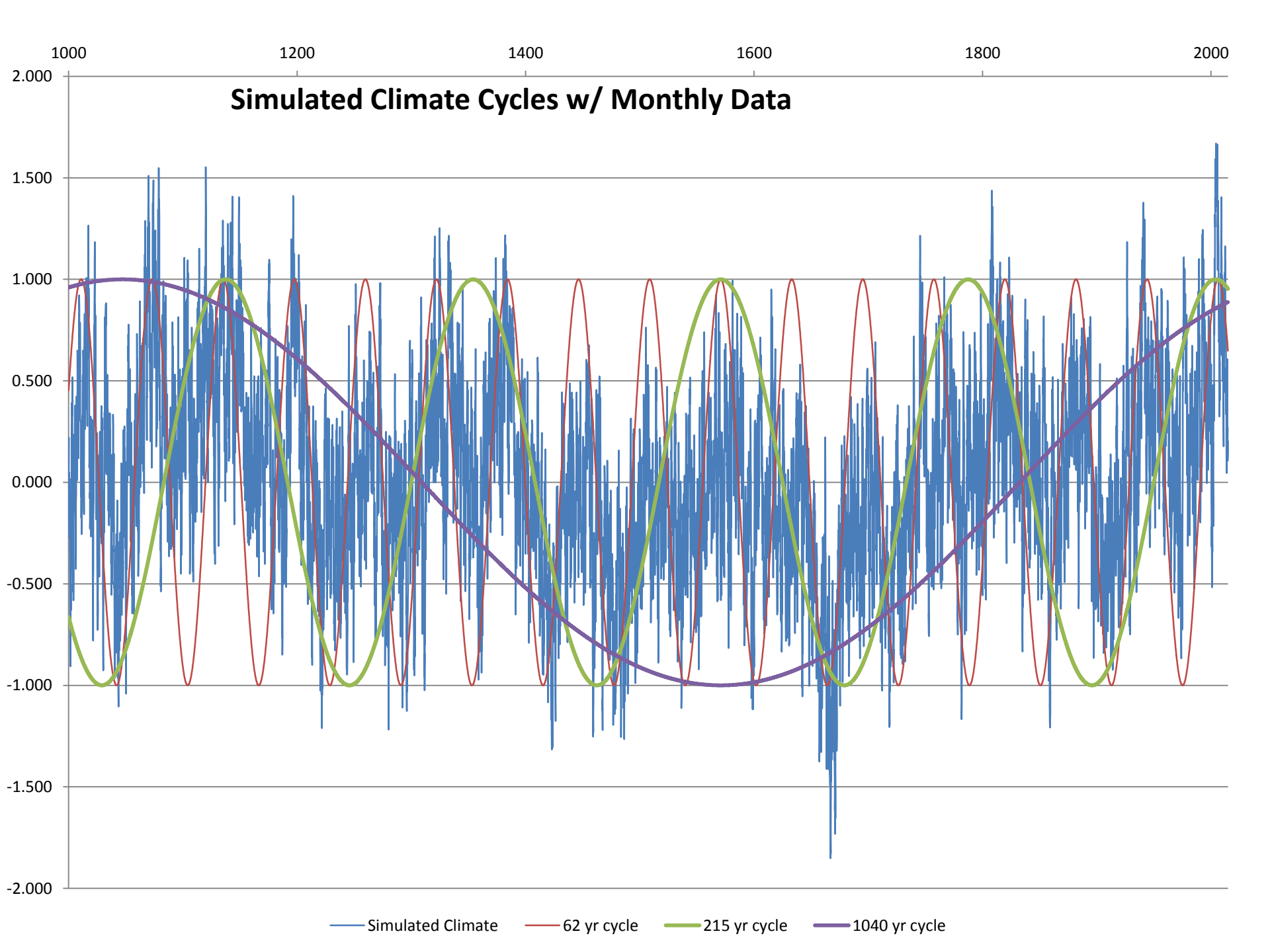
Caryl's Model

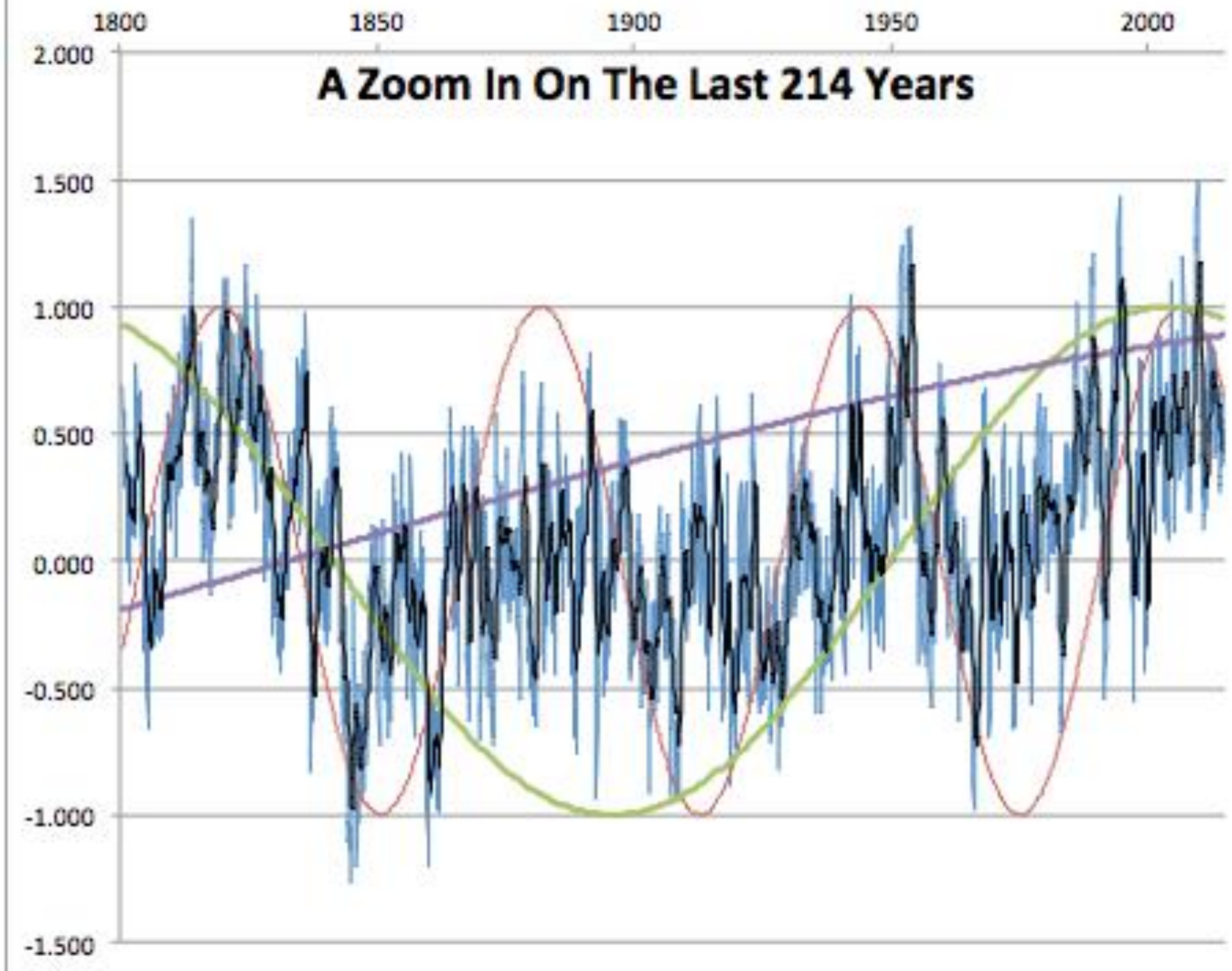
- Is based on all three cycles (62, 204 & 1040)
- He aligns these three cycles and blends them into both a noisy and curve fitted pattern
- The next plot shows the summed curve
- The plot after that one shows the HADCRUT4 actual temperature plot over-layed on Caryl's summed plot (using the historical temperature record)

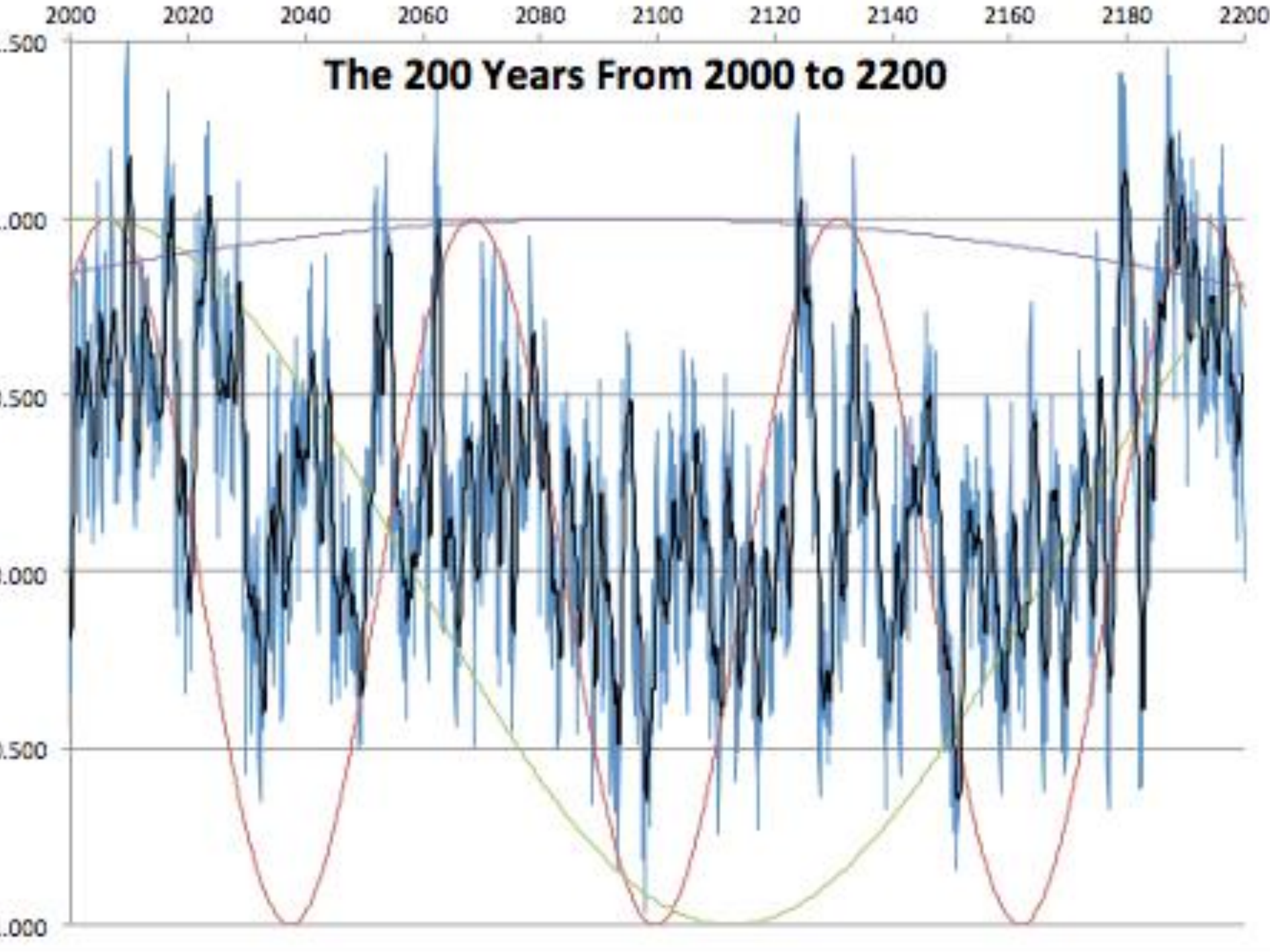
Figure 1 is the sum of the three natural cycles, the 62, 204, and 1040-year cycles. The green rectangle outlines the historical temperature record, from 1850 to 2015. The blue rectangles highlight cold periods, the red rectangles the warm periods. The numbers for the warm and cool periods are the beginning and end years for each period. Yellow highlights the future.




Natural Cycles Compared To HADCRUT4
1800
1850
1900
1950
2000
2050
2100
2150
2200
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
Sum of Natural Cycles
HADCRUT4
12 per. Mov. Avg. (HADCRUT4)


Simulated Climate Cycles w/ Monthly Data
1000
1200
1400
1600
1800
2000
2.000
1.500
1.000
0.500
0.000
-0.500
-1.000
-1.500
-2.000
Simulated Climate
62 yr cycle
215 yr cycle
1040 yr cycle

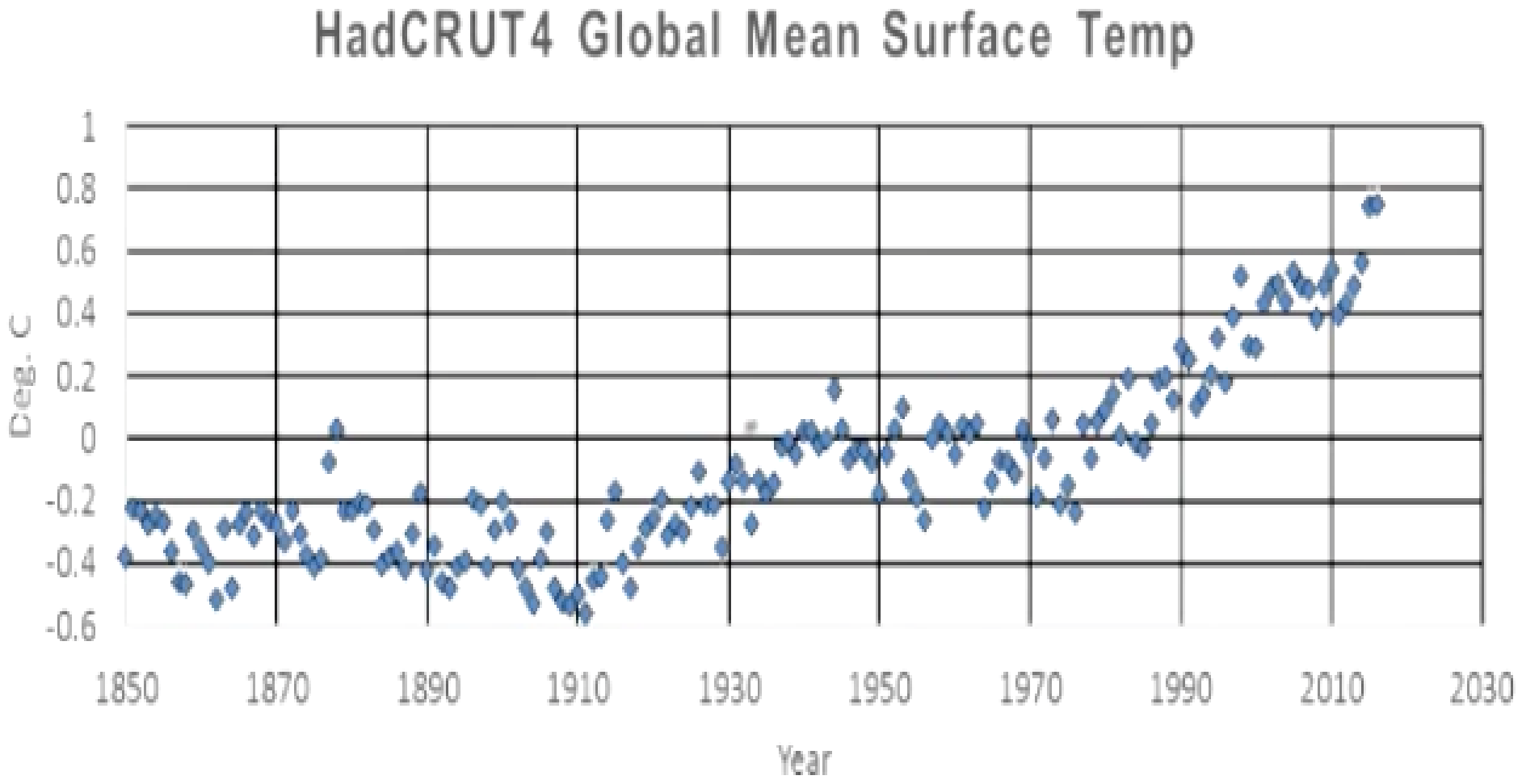

A Zoom In On The Last 214 Years
1800
1850
1900
1950
2000
2.000
1.500
1.000
0.500
0.000
-0.500
-1.000
-1.500


The 200 Years From 2000 to 2200
2000
2020
2040
2060
2080
2100
2120
2140
2160
2180
2200

The “Right Climate Stuff” Team Model

- An informal group of experienced ex-NASA engineers and scientists with Dr. Harold Doiron as the lead
- A group much like our own who complained about the many failings of the IPCC un-validated models and went on to develop their own

TRCS First Graphic

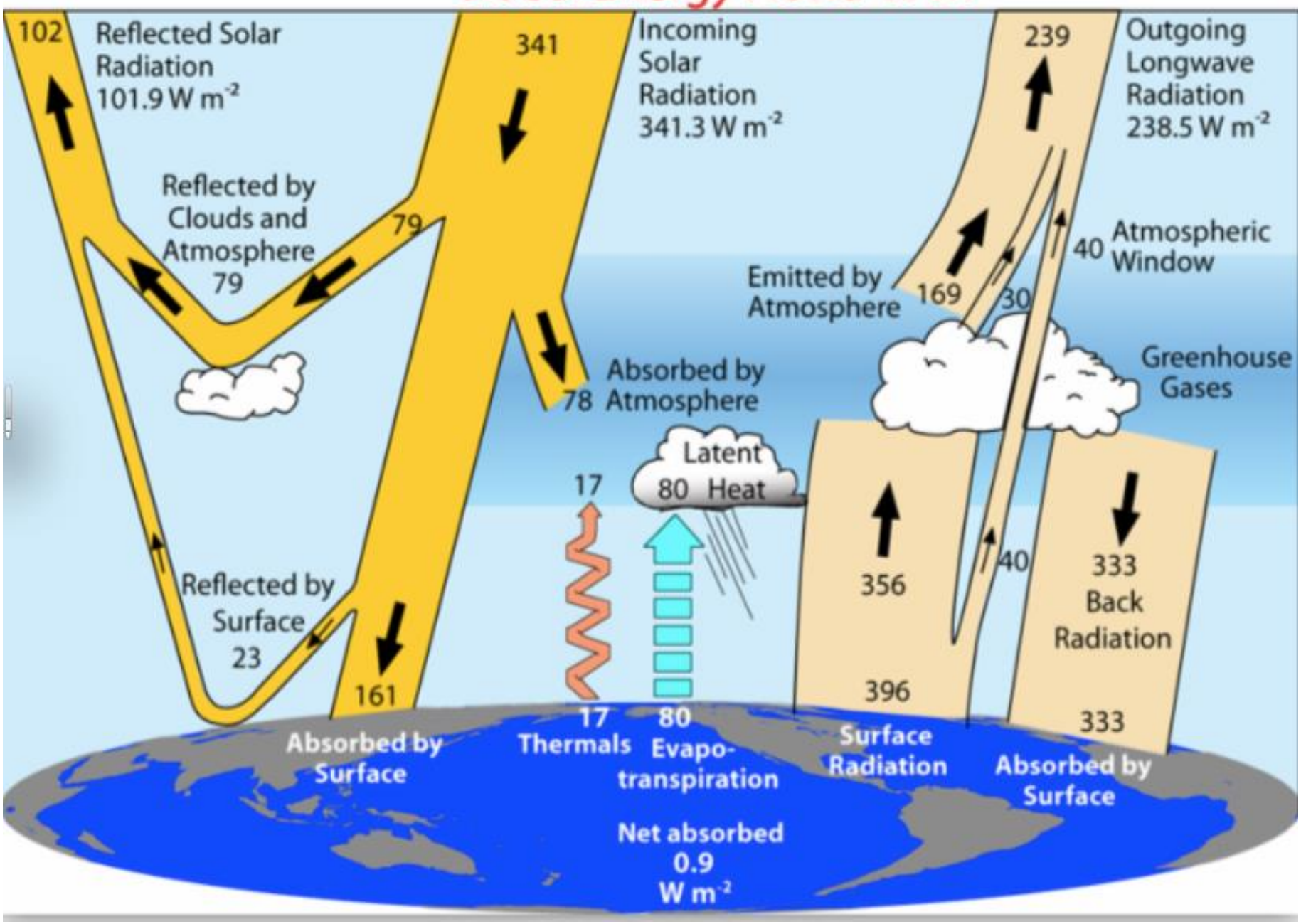


Issues between TRCS and IPCC

- The crux of the disagreement was that of the unrealistic IPCC Equilibrium Climate Sensitivity (ECS) and Transient Climate Response (TCR) metrics and the TRCS Transient Climate Sensitivity (TCS) metric that is comparable to real data
- The TRCS team has major issues with the idea that IPCC models have not been validated
- And with the idea that a 0.8 deg C warming over the past 165 years is something to be alarmed about

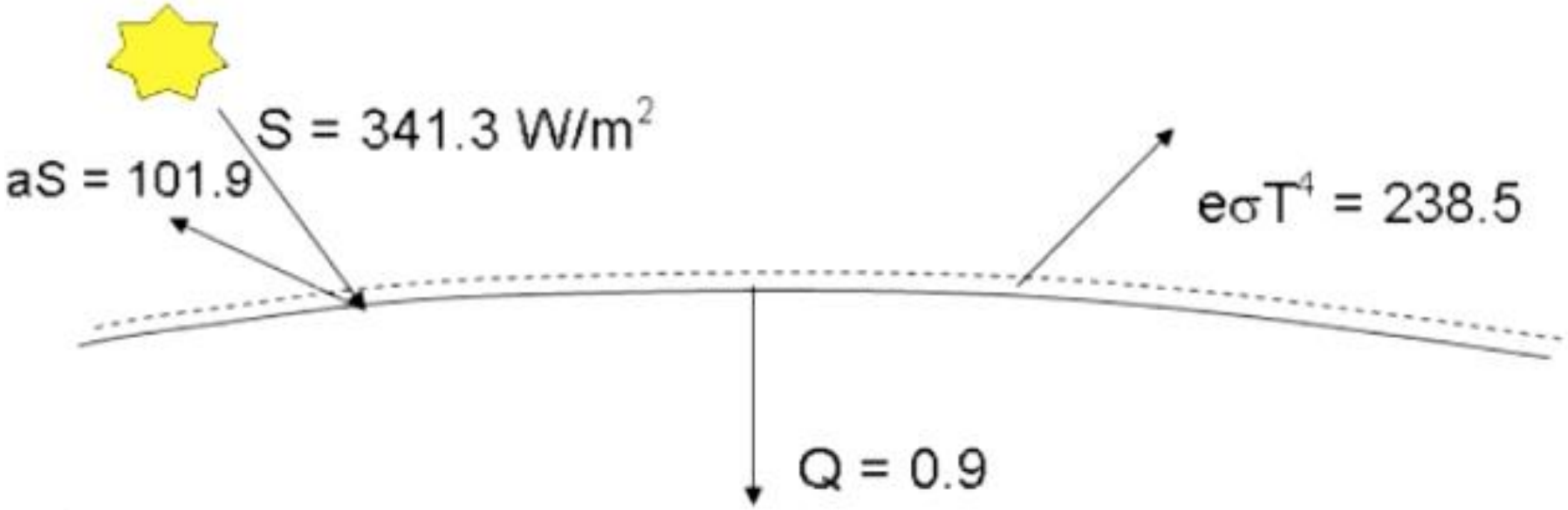
Equilibrium Climate Sensitivity and Transient Climate Response vs. TRC

- ECS value is an academic rather than realistic concept that tracks long term climate effects
- TCR is dramatically over estimated
- ECS defined as a global temperature rise that occurs with a doubling of atmospheric CO2 from pre-industrial levels to about 560 ppm
- IPCC Assessment Reports after 30 years continue to show ECS values of wide uncertainty (ECS from 1.5 to 4.5 deg C)
- EPA arbitrarily uses a range of ECS from 1 to 10 deg C for regulatory purposes


Global Energy Flows W m-2
102
Reflected Solar Radiation 101.9 W m-2
341
Incoming Solar Radiation 341.3 W m-2
239
Outgoing Longwave Radiation 238.5 W m-2
Reflected by Clouds and Atmosphere 79
79
40 Atmospheric Window
Emitted by Atmosphere
169
30
Absorbed by 78 Atmosphere
Greenhouse Gases
Latent 80 Heat
17
Reflected by Surface 23
356
40
333 Back Radiation
396
161
17 Thermals
80 Evapo-transpiration
Surface Radiation
333
Absorbed by Surface
Absorbed by Surface
Net absorbed 0.9 W m-2

Earth Surface Energy Balance

TRCS



$e(W, C, G)\sigma T^4 = (1 - a)S - Q$

Negligible Contributors

- Incoming radiation from stars other than our Sun
- Heat rising from Earth's molten core
- Heat generation processes on the Earth's surface
  - Forest fires, decaying organic matter, burning fuels

Terms

- W= Water Vapor C= Carbon GHG G= Other GHG
- T= Temperature (288 K) β= GHG Effects
- a= albedo S= incoming radiation (341.3 W/m^2)
- Q= energy into oceans (0.9 W/m^2)
- e= emissivity - average earth ($238.5/(\sigma T^4) = 0.611$)
- OLR = $e\sigma T^4$ = 238.5 W/m^2 $\sigma = 5.67(10)^{-8}$ $W/m^2/K^4$
- Emissivity Constant= $4e\sigma T^3 = 1/0.302$
- Radiative Forcing since 1850 (Computed from CO IR absorbtion bands) = 3.71 W/m^2 (assumes 284.7 ppm)

A Simple Model For Temperature Changes

TRCS

- Use calculus to form a differential of the Earth Surface Power Balance Equation to evaluate effects of changes in variables

$$d\{e(W, C, G)\sigma T^4\} = d\{(1 - a)S - Q\}$$

$$[(\frac{\partial e}{\partial W}\frac{\partial W}{\partial C} + \frac{\partial e}{\partial C})dC + (\frac{\partial e}{\partial W}\frac{\partial W}{\partial G} + \frac{\partial e}{\partial G})dG\,]\sigma T^4 + 4e(W,C,G)\sigma T^3 dT = (1-a)dS - Sda - dQ$$

$\sigma = 5.67(10)^{-8}\ W/m^2/K^4$ $\quad e\sigma T^4 = 238.5\ W/m^2$

For T = 288K and $e = 238.5/(\sigma T^4) = 0.611$, $\quad 4e\sigma T^3 = 1/0.302$

$dT = [0.302]\{-$ [changes in e(W, C, G)] $\sigma T^4 + (1-a)dS - Sda - dQ\ \}$

changes in $e(W, C, G)]\sigma T^4$ are called Radiative Forcing from GHG including water vapor (W) feedback effects

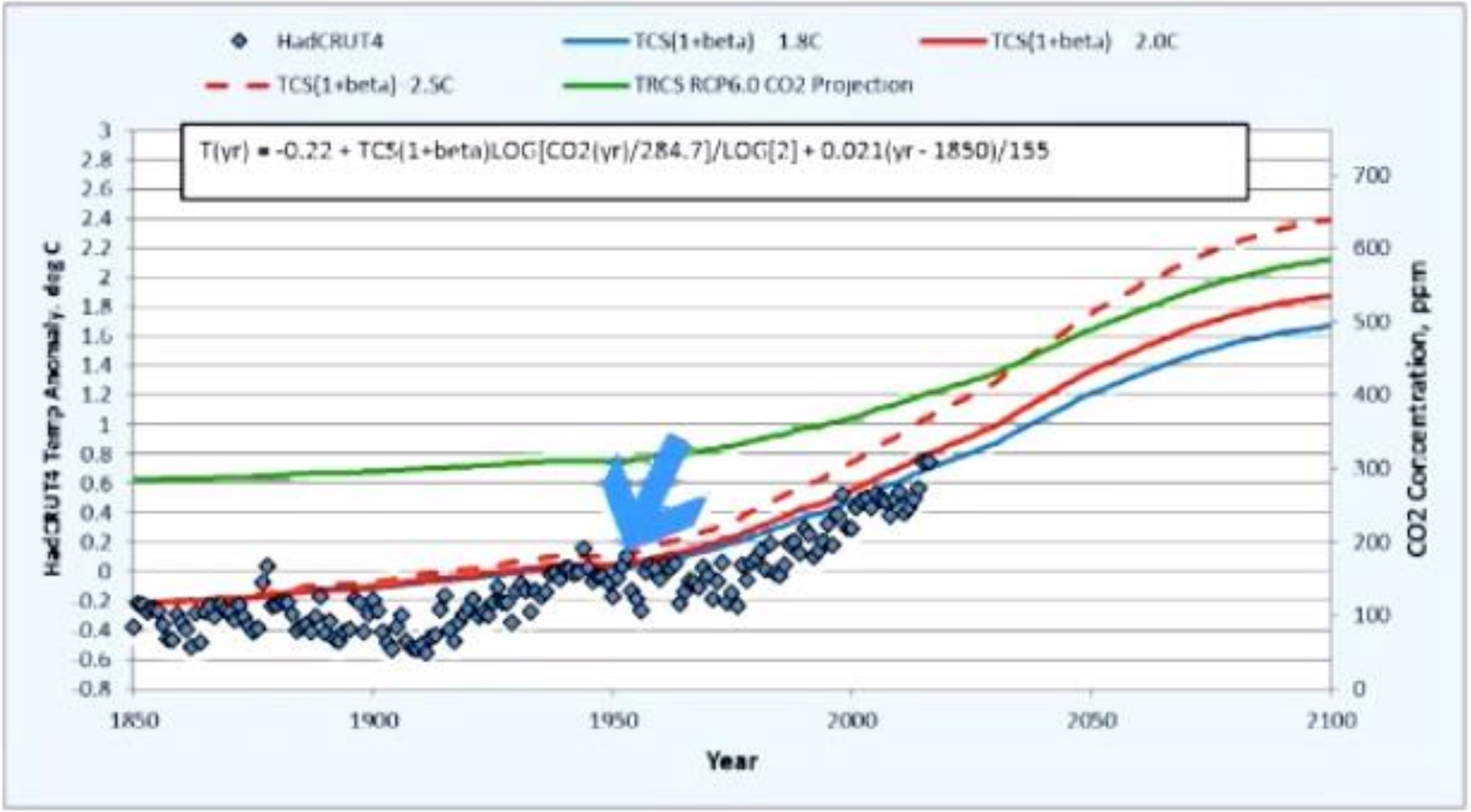
Transient Climate Sensitivity (TCS)

TRCS

- **To obtain a verifiable GHG climate sensitivity metric, our research team defined a new metric:**
  - **Transient Climate Sensitivity (TCS)** – The rise in global average surface temperature due to the actual gradual rise of CO2 in our atmosphere until CO2 levels are doubled
  - **Effects of all GHG are approx. = 1.5x(CO2-only effects)**
  - A **CO2-only TCS** value **is needed** to evaluate effects of **CO2 emissions regulations**
- **TCS is a verifiable quantity using actual data**

Extracting Most Conservative TCS Value

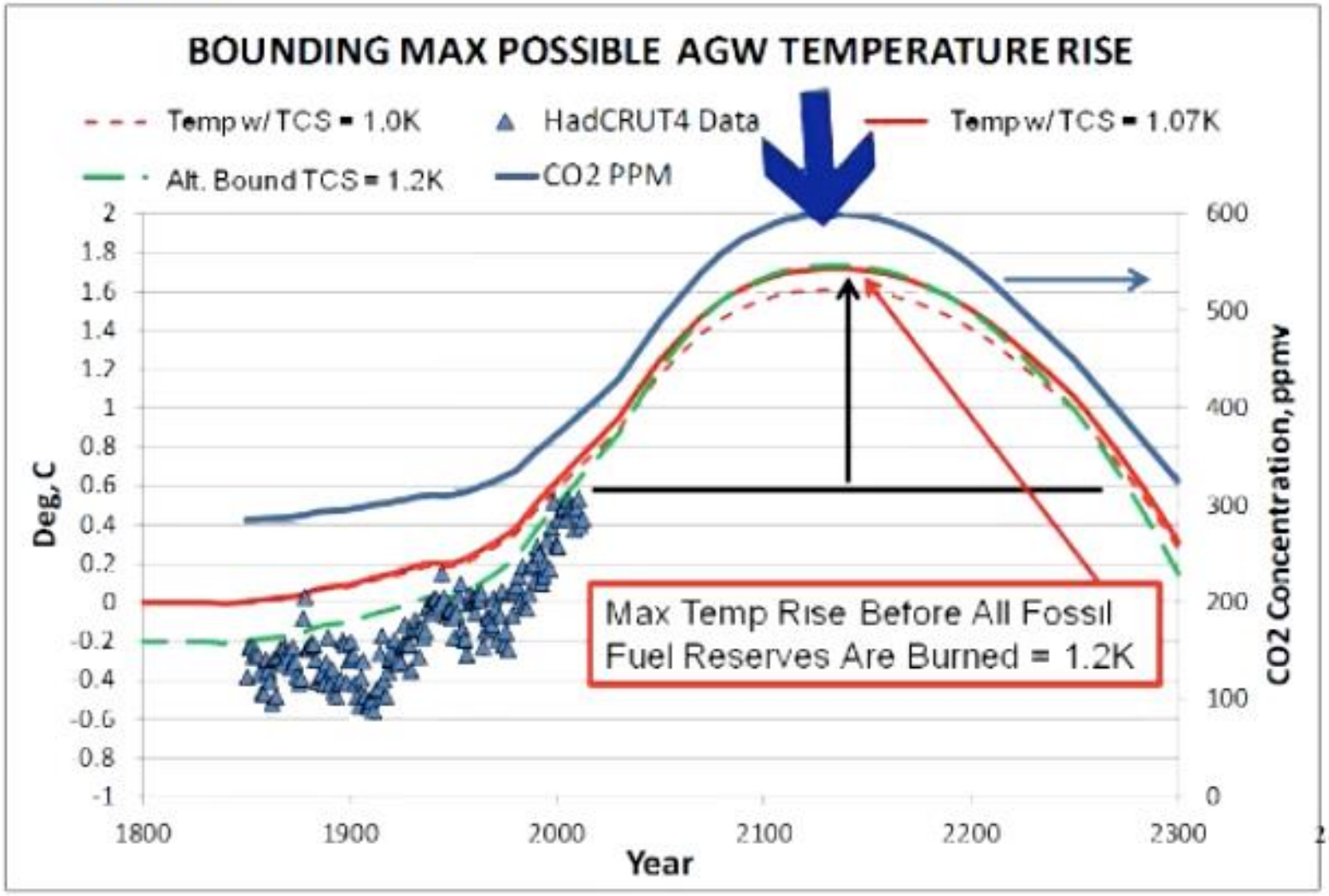
TRCS



Note: Out of family "spurious" data points not bounded by **TCS(1+beta) = 1.8K blue** curve are known to be associated with strong, naturally occurring El Nino events such as in late 1870's, 1998, 2015 and 2016. These events are noted to occur near peaks of the 62 year temperature cycle.

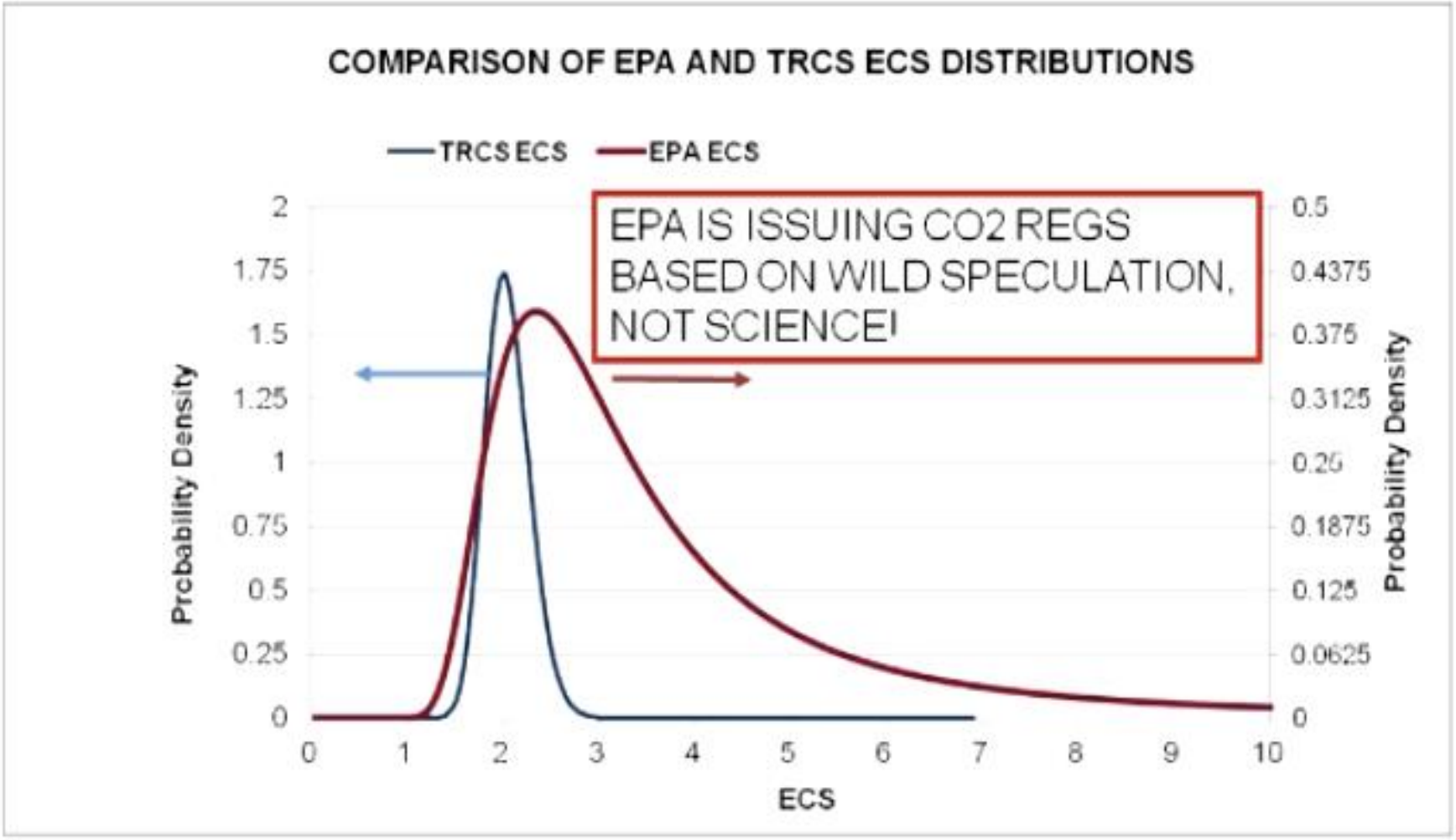
Bounding Future Warming

TRCS



Our ECS Distribution Compared To EPA's

TRCS



Moncton Versus IPCC

- The assumption that temperature feedbacks will double or triple direct warming is unsound. Feedbacks may well reduce warming, not amplify it
- The Bode system-gain equation models mutual amplification of feedbacks in electronic circuits, but, when models erroneously apply it to the essentially thermostatic climate on the assumption of strongly net-amplifying feedbacks, its use leads to substantial overestimation of global warming.
- Climate modelers have failed to cut their central estimate of global warming in line with a new, lower estimate of the feedback sum (AR5, fig. 9.43). They still predict 3.3 K warming per CO2 doubling, when on this ground alone they should only predict 2.2 K, of which direct warming and feedbacks each contribute about 50 %.

The Lord Vs. the UN (Cont.)

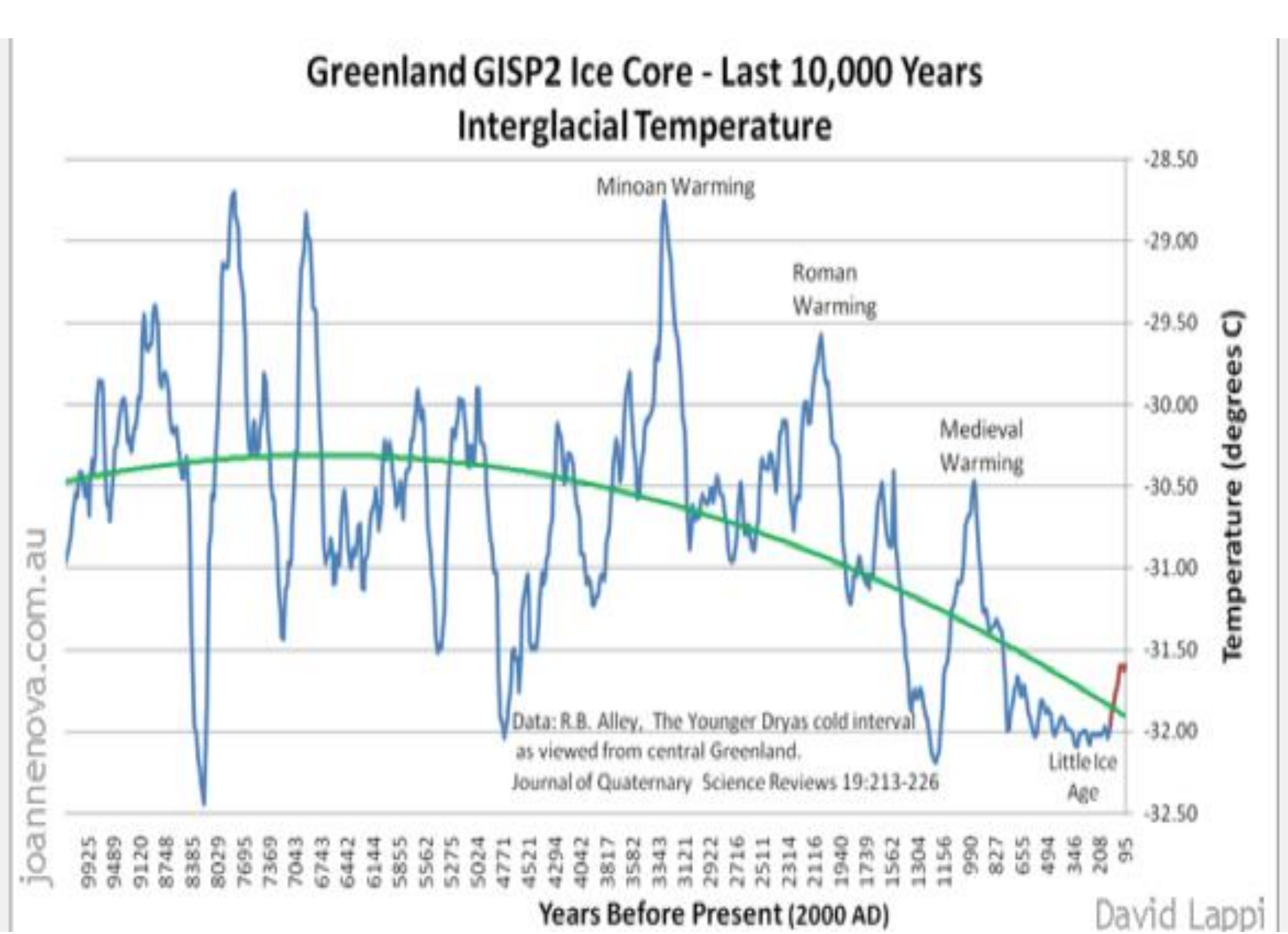
- Though general-circulation models suggest 0.6 K man-made warming is “in the pipeline” even if CO2 emissions cease, the simple model, supported by almost two decades without significant global warming, suggests there is no committed but unrealized man-made warming still to come.
- AR5’s extreme RCP 8.5 forcing scenario predicting

Moncton's Model

- Does not even address the natural (data driven) process to any extent
- It simply shows where the IPCC models fail
- It addresses areas where we have complained about the IPCC and warmist's assumptions over the years (eg. annual increase of CO_2 greater than 2 ppm, positive rather than negative feedback etc.)

Conclusions

- The complex IPCC models using hypothetical constructs for most of their parameters do not come anywhere near what we see real global temperatures doing
- Some simple almost homemade models are doing a better job of following actual temperatures for the past few decades
- These simple models should help us predict future temperatures with much greater certainty


Greenland GISP2 Ice Core - Last 10,000 Years
Interglacial Temperature
Minoan Warming
Roman Warming
Medieval Warming
Little Ice Age
Data: R.B. Alley, The Younger Dryas cold interval as viewed from central Greenland. Journal of Quaternary Science Reviews 19:213-226
-28.50
-29.00
-29.50
-30.00
-30.50
-31.00
-31.50
-32.00
-32.50
Temperature (degrees C)
9925 9489 9120 8748 8385 8029 7695 7369 7043 6743 6442 6144 5855 5562 5275 5024 4771 4521 4294 4042 3817 3582 3343 3121 2922 2716 2511 2314 2116 1940 1739 1562 1304 1156 990 827 655 494 346 208 95
Years Before Present (2000 AD)
joannenova.com.au
David Lappi