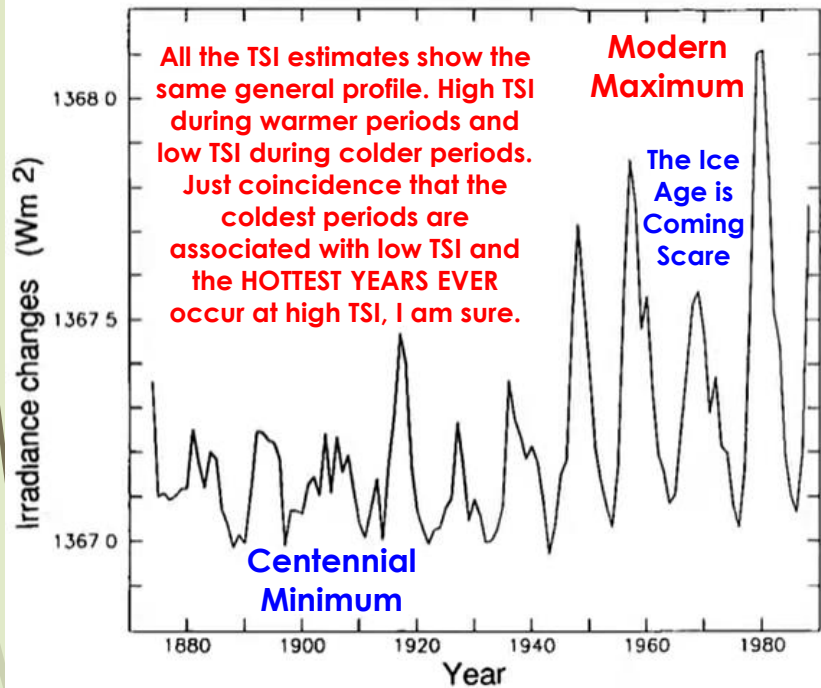


GSM - Grand Solar Minimum. The real "Climate Change" existential threat is right around the corner. Do the Research!

CSS-20a Homogenization – Solar Activity Style – TSI Examples

More detail? climatechangemusic.com



This Climate Short Story (CSS) is based on a review of Dr. John Robson's recent Climate Discussion Nexus (CDN) video ([Looking At The Sun](#)). I found the video interesting, and it struck me that this was just one more example of data manipulation (in CAGW alarmist parlance, homogenization). Why adjust the narrative, when you can just adjust the data to fit the narrative? This tactic is routinely used to "adjust" the surface temperature data or by applying positive feedbacks (unsubstantiated water vapor forcings) in those computer models the IPCC admits run way too hot. I looked at surface temperature homogenization in my [CSS-13 – A Look At Homogenization](#) and [CSS-19 – Calgary – Homogenization](#) (anecdotal but played out around the world) posts. Back-up for the "Hot" models can be found in my [OPS-55 – The State of Climate Science](#) post. The CAGW alarmist crowd also continues to ignore the basic scientific empirical data requirement. There is no empirical CO₂/Temperature dataset that shows CO₂ driving the climate on

any statistically significant historical time scale. How does the Scientific Method deal with data? Not the CAGW alarmist way. The narrative needs to be modified to conform with the empirical data.

[OPS-47 – Fact Checking – The Scientific Method](#)

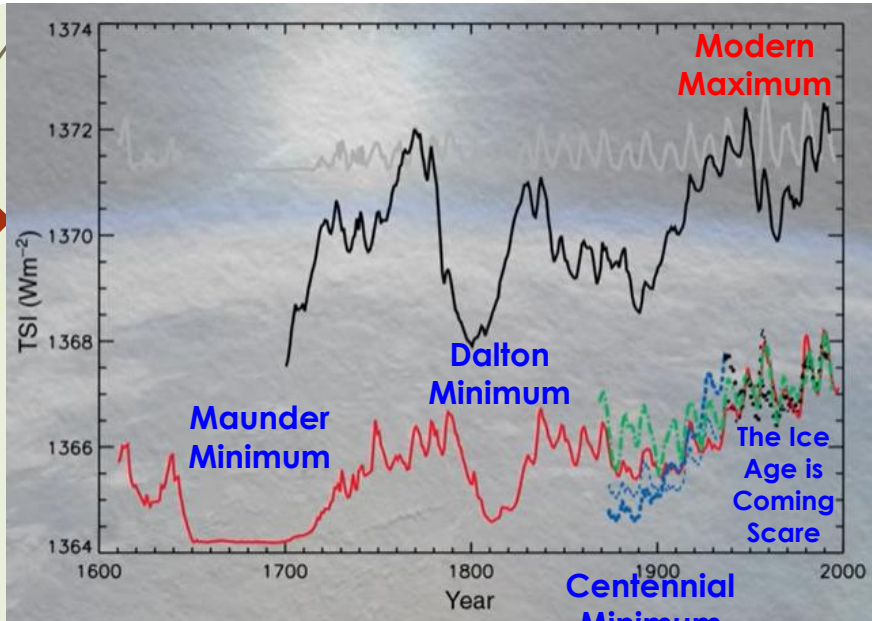
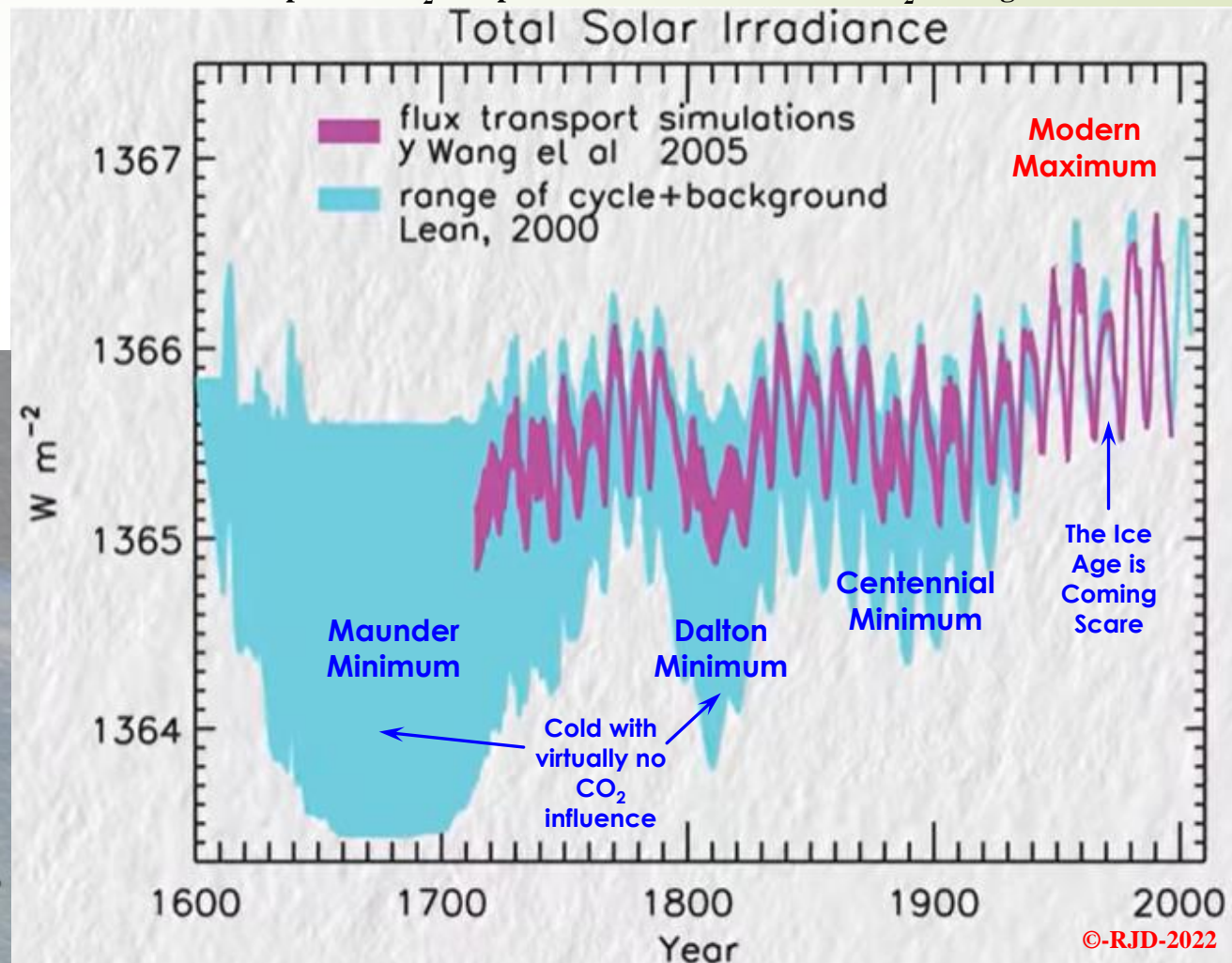


Figure 6.5: Reconstructions of total solar irradiance (TSI) by Lean *et*

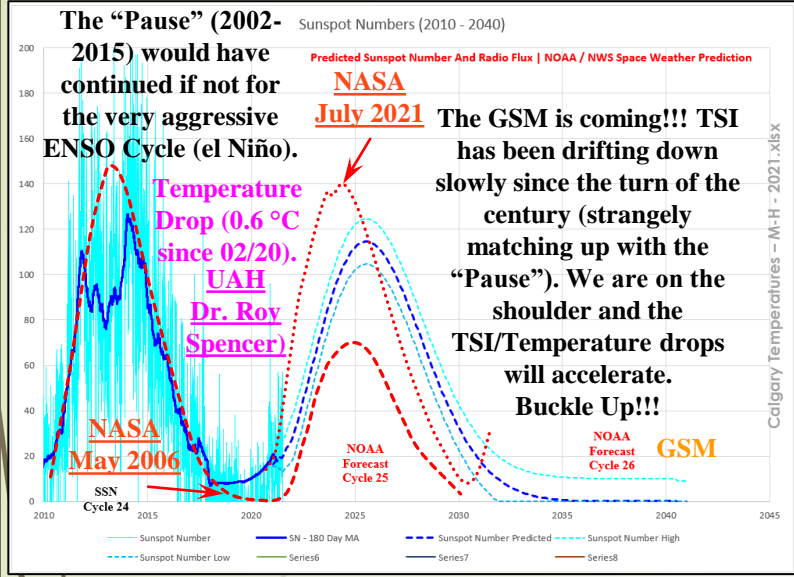
Total Solar Irradiance Examples

All the screenshots shown in this CSS (except the CSS-20b slide) are taken from the CDN Video. Worth the watch and I suggest you follow his Youtube Channel and check out the [CDN website](#).

CSS-20b Homogenization – Solar Activity Style – My TSI Plots

More detail? climatechangeandmusic.com

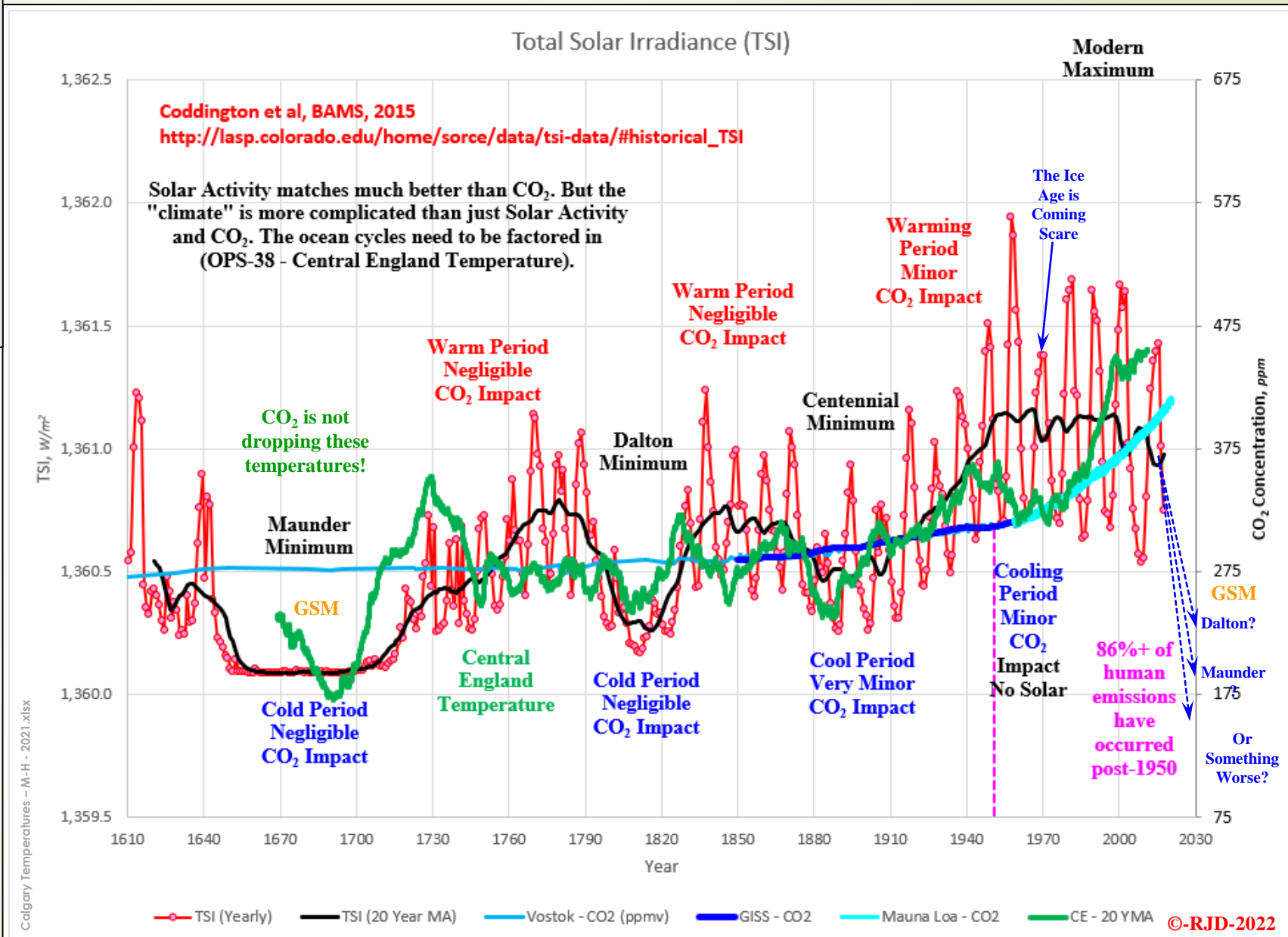
GSM – Grand Solar Minimum. The real “Climate Change” existential threat is right around the corner. Do the Research!



A Grand Solar Minimum (GSM) has been forecast by many prominent Solar Physicists. Our political establishment and the general public should wake up to the dangerous circumstances that come with every GSM. A little more data/discussion is included in my [OPS-21 – Solar Cycles](#) and [OPS-52 – Solar Activity – NOAA Forecast](#) posts. The graph to the right also shows the Central England Temperature (CET) and CO₂ profiles since the Maunder Minimum (i.e.: the depths of the Little Ice Age (LIA)). Those early fluctuations (which were also global in nature) were not related to CO₂. More recent temperatures changes may have CO₂ contribution but the natural forcings were still active. After all, the declines from the mid-1940s to the mid-1970s (the Ice Age is Coming Scare) or the Temperature pause/declines in this century cannot be attributed to the rising CO₂ levels. More detail in my [CSS-16 – Central England Temperature – Model](#) post.

My TSI Plots

I have sourced my TSI data from the Laboratory of Atmospheric and Space Physics (LASP) at the University of Colorado, Boulder, showing essentially the same general profiles as the previous slide. There are longer data sets, but this is the period covered by the CDN video. I have added the NOAA and NASA Sunspot forecasts. NOAA is forecasting another low sunspot cycle for Cycle 25 with no sunspots for Cycle 26.



CSS-20c Homogenization – Solar Activity Style – ACRIM Issues

More detail? climatechangeandmusic.com

The CDN video's primary focus is the gap in the Active Cavity Radiometer Irradiance Monitor (ACRIM) satellite TSI data. This gap in the data has allowed questions about the calibration between the ACRIM1 and ACRIM2 satellite information.

Normally the operations of the two satellite systems is overlapped so that datasets can be calibrated to one another easily. Other, less accurate data is available during the gap and was used to produce an estimate of the TSI during the gap and modifications necessary to account for the calibration issues.

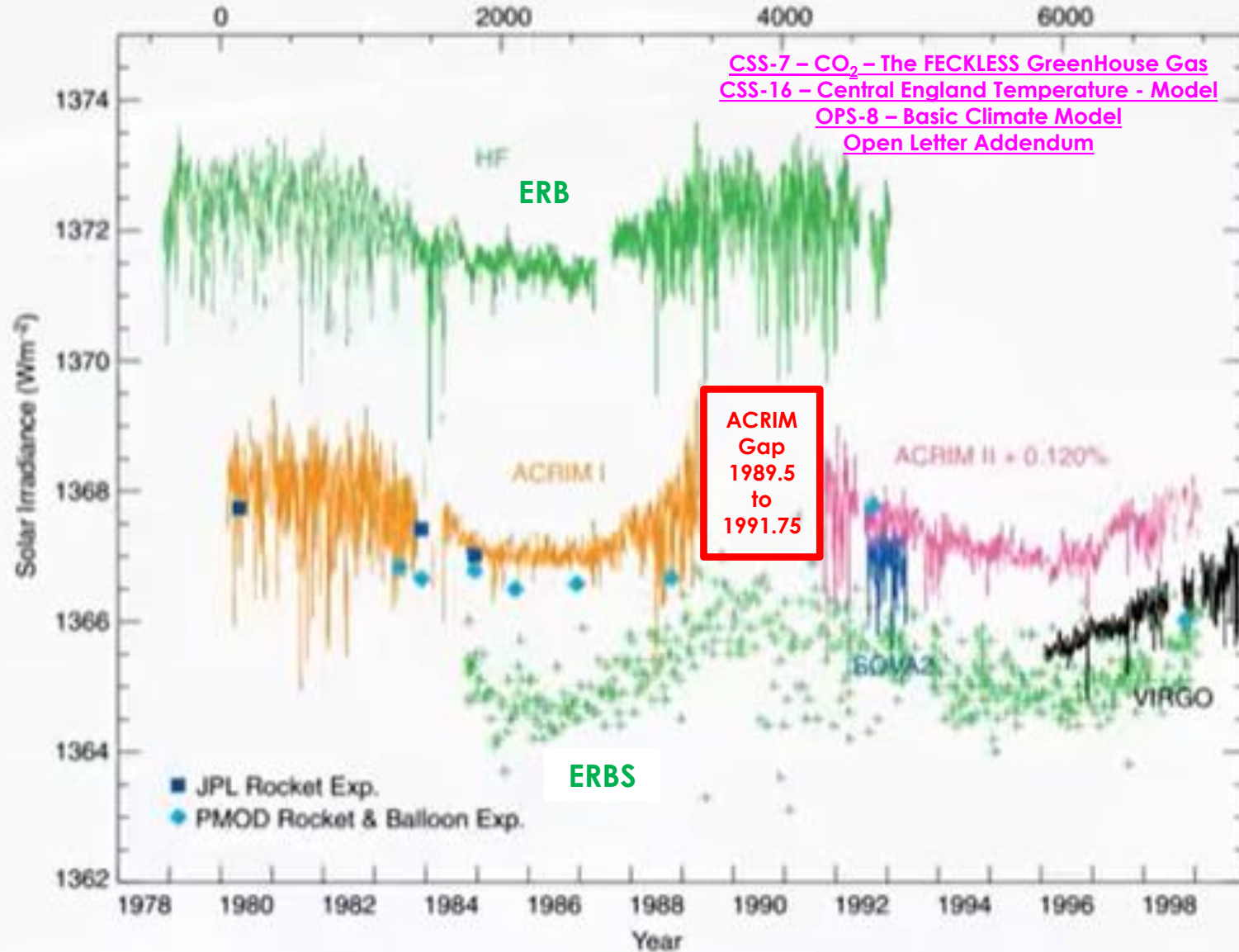
The ACRIM team led by Richard Willson (with help from Nicolas Scaffeta) made a TSI composite, but that did not conform to the CAGW narrative. So, a new team (led by Claus Fröhlich and Judith Lean) put together an alternative TSI composite that was more in line with the Narrative. More on that later. For the record, the LASP TSI data I use conforms to the Fröhlich/Lean composite. Realistically, the difference between the two TSI data sets has almost no impact on the climate discussion. The LASP TSI Momentum (TSI_M , the 20 Year Moving Average) peaked in 1950, levelled out with “minor” fluctuations (one of them, Sunspot Cycle 20 led (with ocean cycle help) to the Ice Age Is Coming Scare), then began declining more noticeably around the turn of the century. Strange how that solar decline corresponds with the “PAUSE”. That suggests that the Minor solar activity decline was able to overpower the CO_2 warming (ocean cycles were benign). The temperatures did increase from around 1975 to 2005. Solar activity would have played a small role in that temperature rise if the Willson composite is correct (which it likely is). But it was not all CO_2 , the Atlantic Multi-decadal Oscillation (AMO) played a major role. If the Fröhlich/Lean interpretation is correct, then solar activity played no role in that temperature rise (but the AMO was still active). In the end,

ACRIM Issues

CO_2 is a FECKLESS GreenHouse Gas (CSS-7).

Radiative Forcing of Climate Change

Note: The Modern Temperature Record (MTR, 1850 to the present) can be modelled without CO_2 contribution using just TSI (as a proxy) and the AMO. More detail available at the links outlined below.

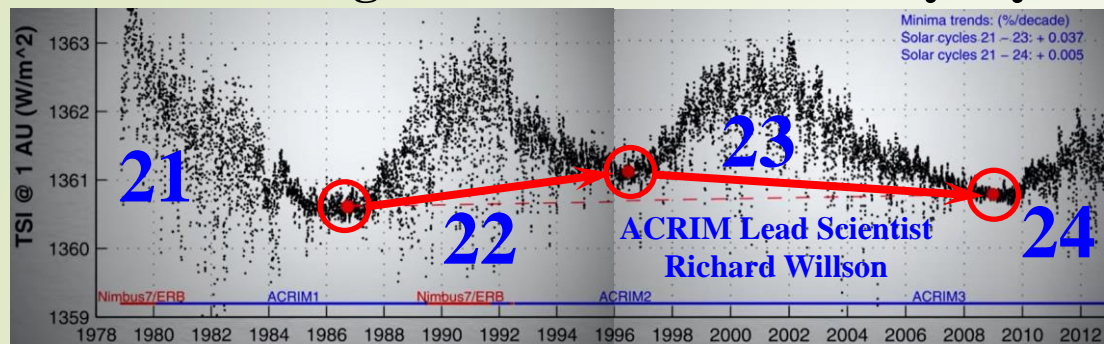


[CSS-7 – CO₂ – The FECKLESS GreenHouse Gas](#)
[CSS-16 – Central England Temperature - Model](#)
[OPS-8 – Basic Climate Model](#)
[Open Letter Addendum](#)

ACRIM Gap
1989.5
to
1991.75

Figure 6-4: Measurements of total solar irradiance made between 1979 and 1999 by satellite, rocket and balloon instruments (http://www.pmodwrc.ch/solar_const/solar_const.html).

GSM – Grand Solar Minimum. The real “Climate Change” existential threat is right around the corner. Do the Research!



In 2014, Pia Zacharias of the International Space Science Institute in Switzerland conceded that the data adjustments are “still a matter of active debate and have prevented the TSI community from coming up with conclusive TSI composite so far.” Then followed that up with the conclusion below.

6 Concluding Discussion and Outlook

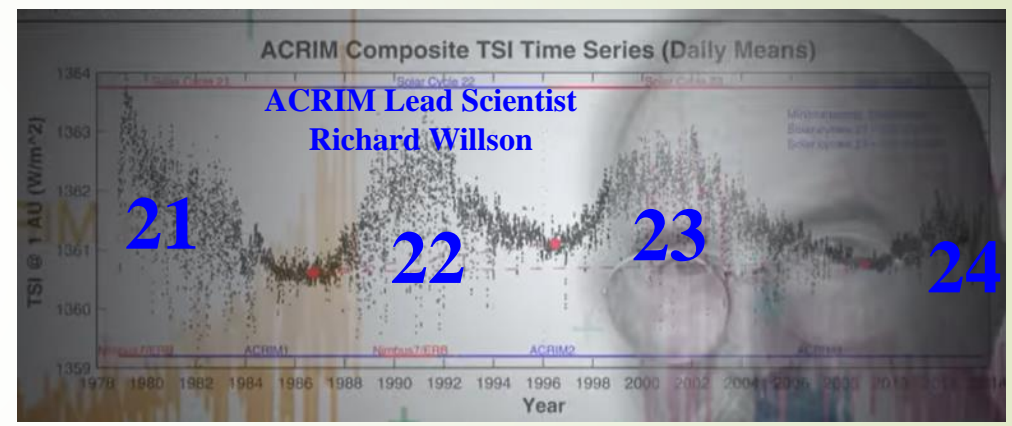
A conclusive TSI time series is not only desirable from the perspective of the scientific community, but also when considering the rising interest of the public in questions related to climate change issues, thus preventing climate skeptics from taking advantage of these discrepancies within the TSI community by, e.g., putting forth a presumed solar effect as an excuse for inaction on anthropogenic warming.

such a way is something Lean has considered. “The fact that some people could use Willson’s results as an excuse to do nothing about greenhouse gas emissions is one reason we felt we needed to look at the data ourselves,” says Lean. “Since so much is riding on whether current



Players

- Climate Realists
- Richard Willson
- Nicolas Scaffeta
- Climate Alarmists
- Claus Fröhlich
- Judith Lean
- Pia Zacharias



The two ACRIM TSI Composite results are shown (with the players laid out). Willson (the lead ACRIM scientist, with the help of Nicolas Scaffeta) produced the TSI curve above and directly to the left. This composite shows an increase in TSI from the SSN 21/22 cycle low to the SSN 22/23 cycle low, then a slight decrease to the SSN 23/24 cycle low. The Fröhlich/Lean composite shows has a shallow decline between the SSN 21/22 and 22/23 cycle lows and a further decline to the SSN 23/24

ACRIM Interpolations

cycle low. As I mentioned on the previous page, the climate change discussion is not affected much on an absolute basis and my opinions ([CO₂ is FECKLESS GreenHouse Gas](#)) are based on the Fröhlich/Lean composite. And there is no question that the Fröhlich /Lean team is in the CAGW alarmist camp. The Lean quote above lays out their political (unscientific) rationale rather succinctly. A colleague (Pia Zacharias, above to the right) echoed the Fröhlich /Lean ideological position. I can see that the optics of the argument might favor the CAGW alarmist side, but the subtle differences in these two composites does not impact the discussion significantly. The data not shown is ultimately more important. SSN Cycle 24 turned out to be much weaker than the previous 3 cycles and cycles 25 and 26 are not going to help the CAGW alarmist cause. The “PAUSE” from the late 1990s was interrupted by the strong El Niño in 2015/16. Since then, temperatures (not surprisingly) have dropped significantly ([OPS-56 – The PAUSE](#)).

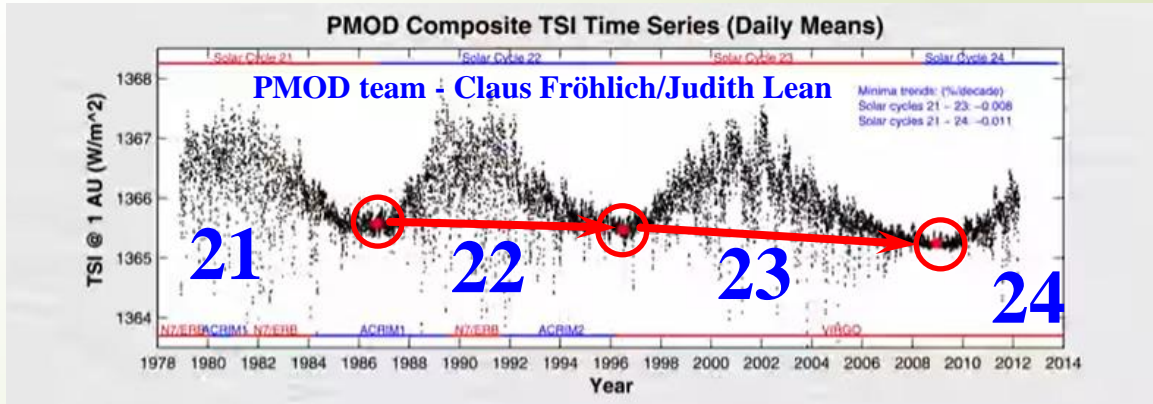
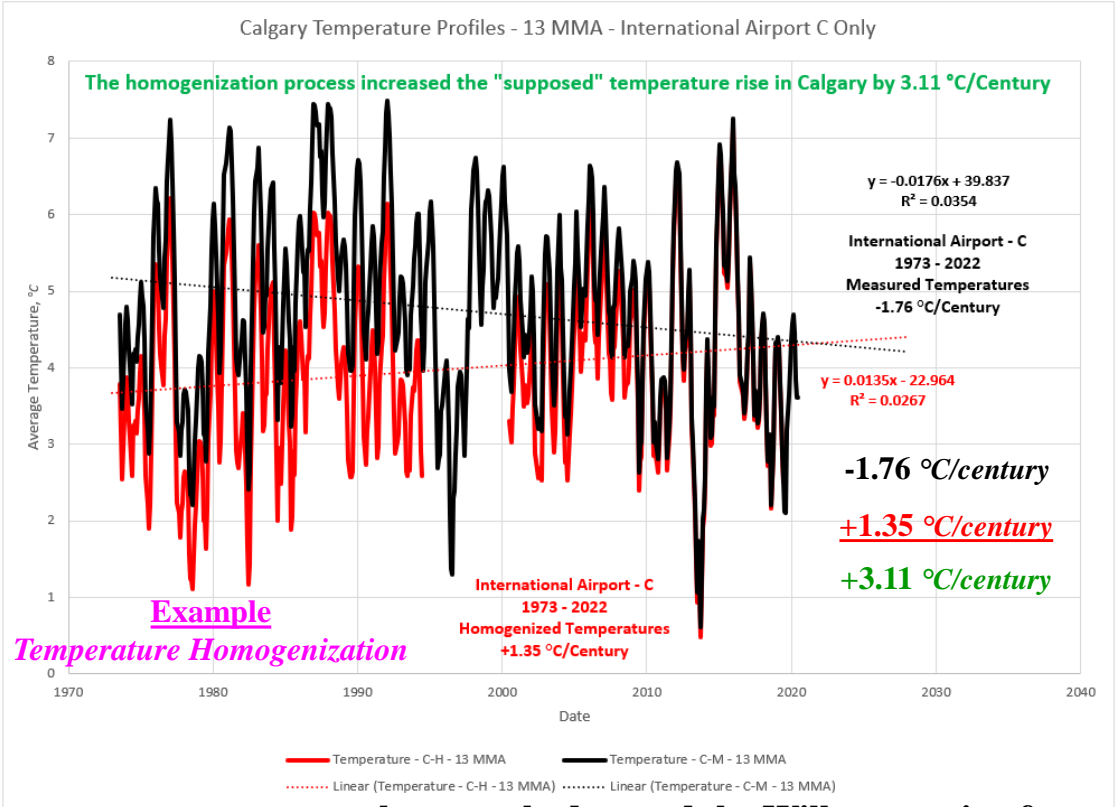


Fig. 2 TSI satellite composites ACRIM (Willson and Mordvinov 2003) and PMOD (Fröhlich and Lean 1998; Fröhlich 2006). Different approaches to bridging the ACRIM Gap result in different trends. The ACRIM composite uses: (1) ERB, ACRIM1, 2 and 3 results published by the experiment science teams; (2) ERB comparisons to bridge the ACRIM Gap; (3) ACRIM3 scale. The PMOD composite uses: ERB, ACRIM1, ACRIM2 and VIRGO results; (2) ERBE comparisons to bridge the ACRIM Gap; (3) Alters published ERB and ACRIM1 results to conform them to TSI proxy models; (4) VIRGO scale

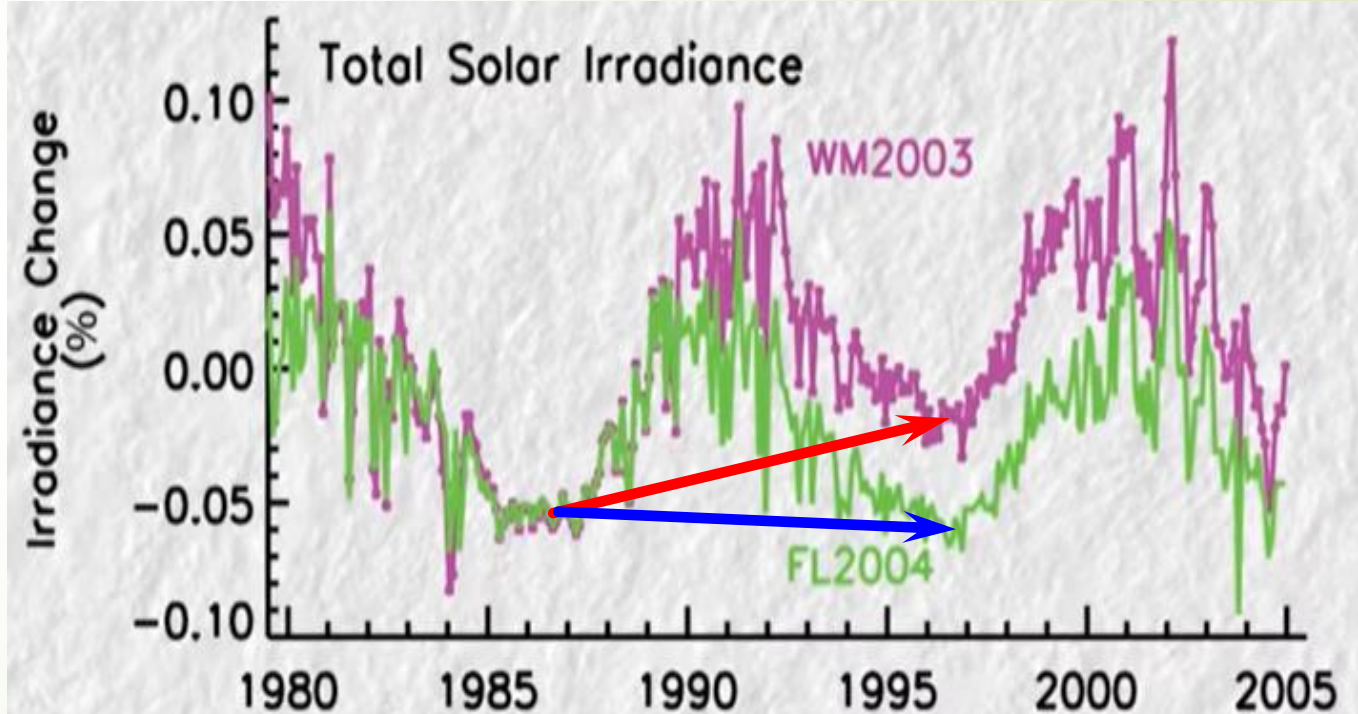
GSM - Grand Solar Minimum. The real "Climate Change" existential threat is right around the corner. Do the Research!

CSS-20e Homogenization – Solar Activity Style – Direct Comparison

More detail? climatechangeandmusic.com



The IPCC published both composites in their 2007 AR4 Report (shown to the right). And there it is, “homogenization” solar activity style. Changing an increase is solar activity to a decrease. Takes me back to the work I did on surface temperature data. Check out my [CSS-19 – Calgary – Homogenization](#) post) where NASA/GISS uses “homogenization” to convert a temperature decline of 1.76 °C/century to an increase of 1.35 °C/century for the “official” record. That is a combined adjustment of +3.11 °C/century. Calgary is localized and anecdotal, but the “homogenization” process was played out worldwide. [My CSS-13 – A Look At Homogenization](#) post, looks at more locations. As they often do, the IPCC



IPCC Direct Comparison

subsequently dropped the Willson version for their 2013 AR5 Report. Strange how information contradictory to the Narrative seems to vanish from the discussion (the Medieval Warm Period, satellite temperature data, the Holocene temperature fluctuations, etc.). Why the discrepancy? The PMOD Team argued “that one of the sensors on the ERB system was defective and experienced an increase in its sensitivity during its time in orbit adding an artificial upward trend to its readings”. That allowed them to adjust the later TSI down. Justified, we shall see? For me either interpretation is fine, since the empirical data taken in total still shows that the CAGW alarmist narrative does not hold water (let alone any latent heat by a CO₂ molecule).

Example
Solar Activity Homogenization
Figure 2.16. Percentage change in monthly values of the total solar irradiance composites of Willson and Mordvinov (2003; WM2003, violet symbols and line) and Fröhlich and Lean (2004; FL2004, green solid line).

“Concerning the supposed increase in Nimbus7 sensitivity at the end of September 1989 and other matters as proposed by Frolich’s PMOD TSI composite:

1. There is no known physical change in the electrically calibrated Nimbus7 radiometer or its electronics that could have caused it to become more sensitive. At least neither Lee Kyle nor I could ever imagine how such a thing could happen and no one else has ever come up with a physical theory for the instrument that could cause it to become more sensitive.

Willson and Scafetta were not inclined to just roll over and accept the new composite without further investigation. So, they contacted the scientist in charge of the ERB satellite system (Douglas Hoyt, since retired) for his views on the sensitivity issues brought up by the PMOD team. His response, shown here, did not confirm the

Frohlich/Lean (the PMOD team) position. Ultimately, just more mis and dis information from the CAGW alarmist side of the discussion. I doubt that we will ever get to “settled science”, given that the alarmist community continually fails to follow the Scientific Method

while they are following “the science”. The solar activity “homogenization” is a small piece of the puzzle, but the CAGW alarmist character shines through when you pull back the curtain.

The empirical data does not back up the CAGW alarmist narrative. The real-world consequences of these unnecessary, unscientific green CO₂ initiatives are playing out on the world stage right now with severe economic consequences (i.e.: energy security, food shortages, supply chain problems, severe environmental damage, inflation, additional unnecessary fiscal pressures on top of our already challenged financial position, etc., etc.). Our “leaders” are ignoring the real threats facing our society, to push their idiotological socialist dreams. We and our families are going to pay dearly for these stupid policy positions.

Douglas Hoyt

2. The Nimbus7 radiometer was calibrated electrically every 12 days. The calibrations before and after the September shutdown gave no indication of any change in the sensitivity of the radiometer. Thus, when Bob Lee of the ERBS team originally claimed there was a change in Nimbus7 sensitivity, we examined the issue and concluded there was no internal evidence in the Nimbus7 records to warrant the correction that he was proposing. Since the result was a null one, no publication was thought necessary.

3. Thus, Frolich’s PMOD TSI composite is not consistent with the internal data or physics of the Nimbus7 cavity radiometer.

4. The correction of the Nimbus7 TSI values for 1979-1980 proposed by Frolich is also puzzling. The raw data was run through the same algorithm for these early years and the subsequent years and there is no justification for Frolich’s adjustment in my opinion.

*Sincerely,
Douglas Hoyt*

**Thank You, Dr. John Robson!
More Info in the video.**

GSM – Grand Solar Minimum. The real “Climate Change” existential threat is right around the corner. Do the Research!