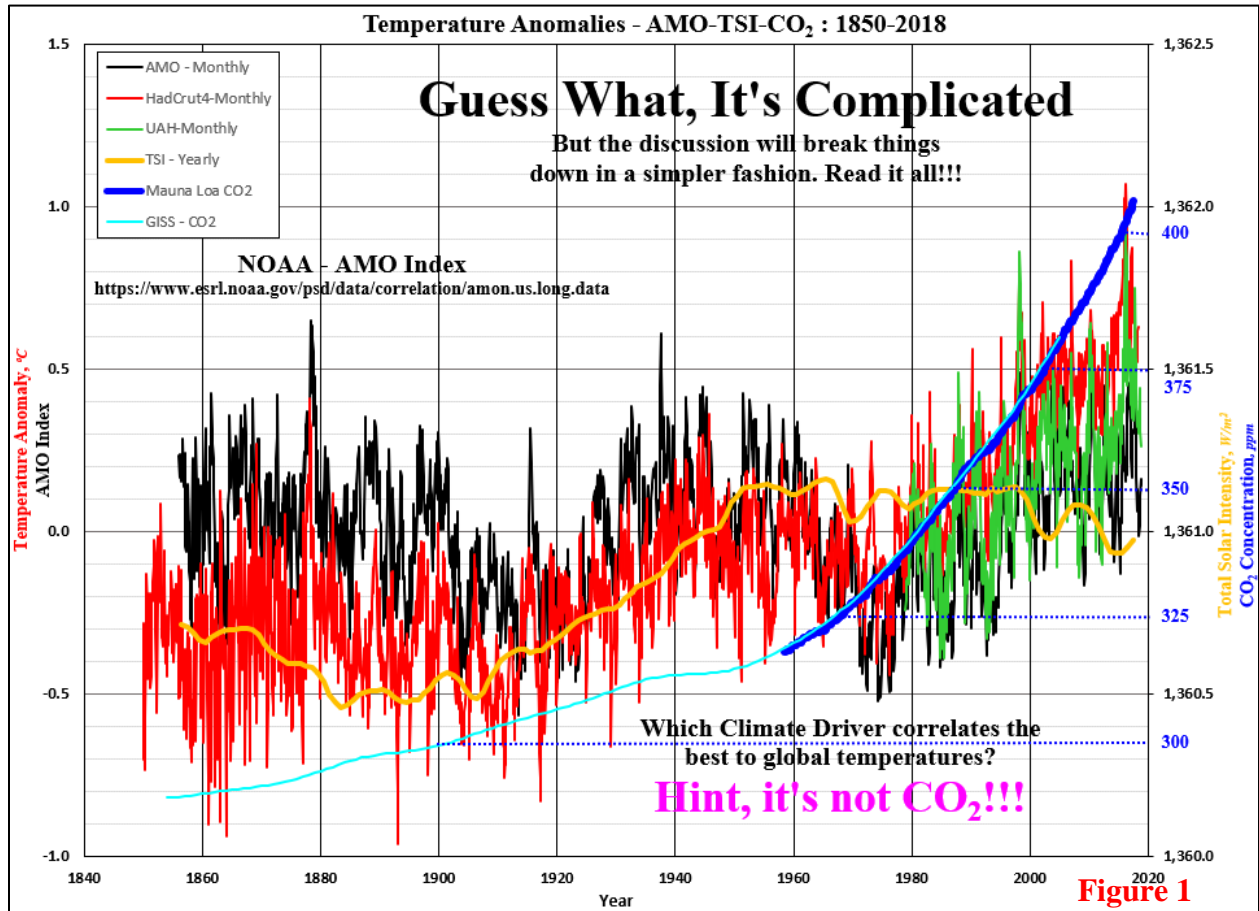


AN OPEN LETTER TO THE WORLD ON CLIMATE CHANGE
RONALD DAVISON (P.ENG.) AUGUST 2018 - Addendum

In my original document, I included a chart (Figure 1) on the first page that referenced the complexity of the “Climate Change” discussion. Due to the complexity, I did not want to get into the chart detail at that time. In this discussion, I will elaborate a bit on the data included in that chart.



Firstly, I will note some changes I made in the plot that has allowed me to do some additional analysis. The AMO Index (indirect solar activity) I originally plotted was just a cut and paste option. I now have the AMO Index data sets from NOAA (so they look slightly different). I also adjusted the UAH data up by 0.12 °C to factor in the difference in the temperature baselines (1961-1990 for HadCrut4 and 1981-2010 for UAH).

If you look at each of the data sets individually, NOAA’s AMO Index (black curve) is by far the most closely correlated single parameter. The AMO cycles are readily visible in the HadCrut4 temperature anomaly data set (red curve). The AMO Index is hovering above the HadCrut4 data over the early data, very closely lays over the middle data and is below the later data (but the up and down cycles are there). Over this entire time period there appears to be something else influencing the temperature (over and above the AMO Index). The “Global Warming” alarmists will say that CO₂ is the reason for the general temperature increase over this time period. The problem with that hypothesis, is the minimal net temperature increases since 2000 (apart from strong el Nino events) and the temperature rises over the first half of the data period which couldn’t have been associated with CO₂ since over 75% of atmospheric CO₂ increase occurred after 1950. Obviously, any significant temperature increases associated with CO₂ would

have to have occurred after 1950. Yet as mentioned earlier temperatures have generally stopped rising since the beginning of the century despite continually rising CO₂ levels. The global temperatures are obviously responding to other parameters than just CO₂.

The remaining climate driver would be direct solar activity (Total Solar Irradiance (TSI)). The TSI correlates well with the first half of the HadCrut4 data set. The TSI over the last half of the data is relatively flat so any fluctuations in the HadCrut4 data post 1950 are not likely related to the TSI.

The discussion so far has focussed solely on the HadCrut4 data set. With that data set alone, you can make an argument that CO₂ has been a significant contributing factor over the 1975 – 2000 time period. But even over that period, the CO₂ is not acting alone. The AMO is also increasing over this time period, along with the Pacific Decadal Oscillation (PDO, not shown). The PDO was discussed in my original paper but does not have a global response as strong as the AMO. Another factor affecting the surface warming magnitude and upward trend is the Urban Heat Island Effect (UHIE). A study by McKittrick and Michaels (2007) showed that half of the warming over land was due to urban development. A significant portion of the weather stations used for estimating surface temperatures are in or near urban settings (in the USA, 69% are within 10 meters of heat sources and only 11% are located in suitable locations). If you look at all the data, CO₂ is probably responsible for 40-50% of the temperature increase from 1850 to the present (my opinion). But that is still open for debate and could be much lower.

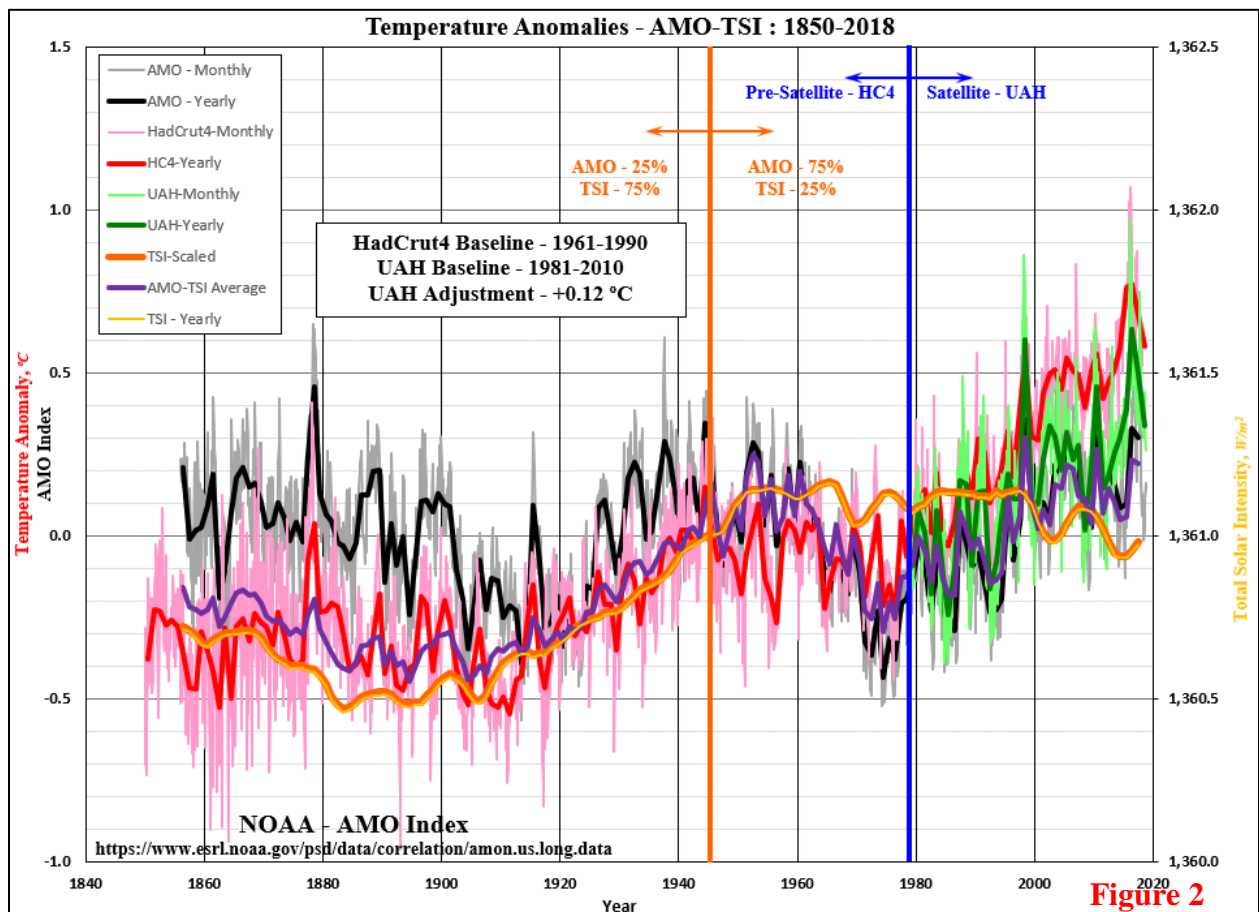
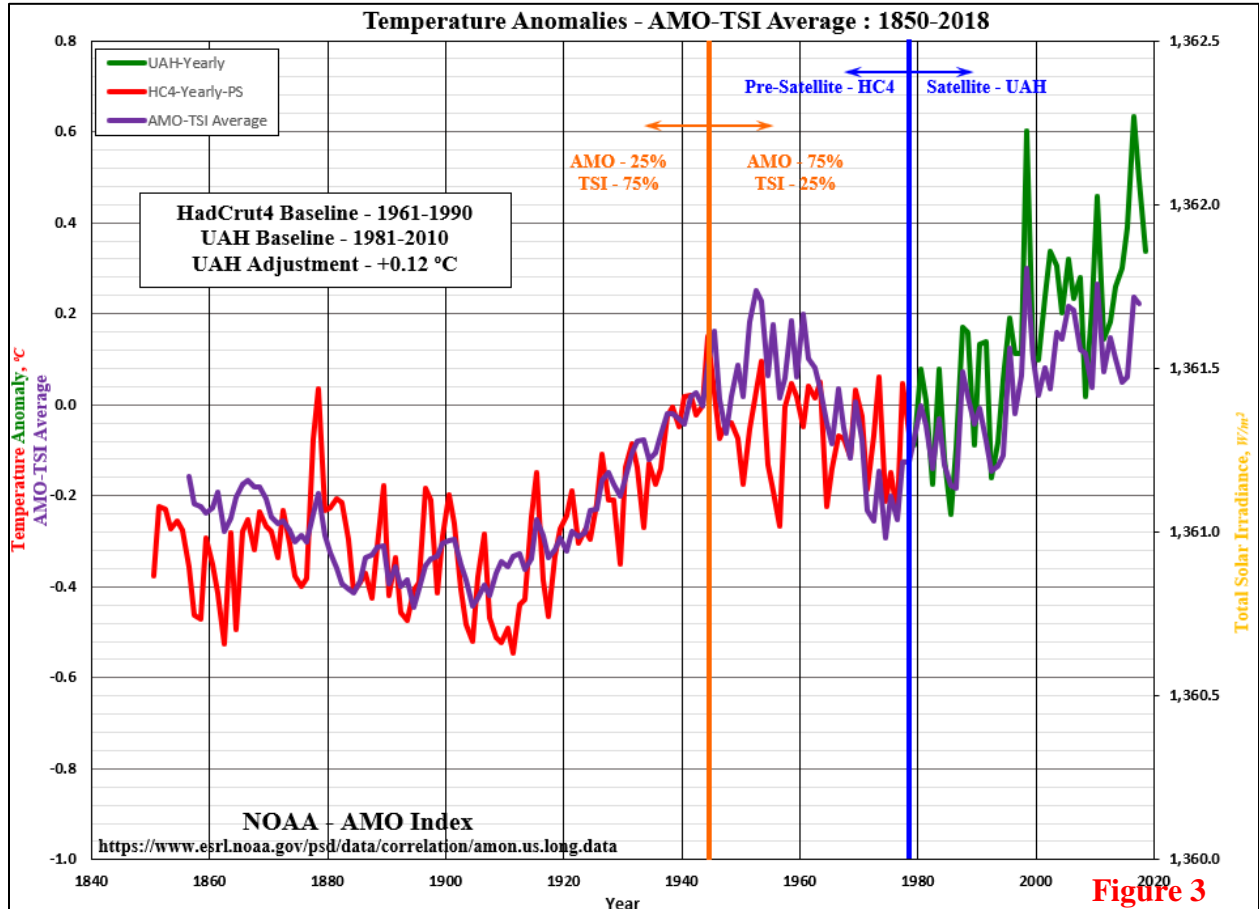


Figure 2

To take some of the intense fluctuation out of the data, the data was condensed into yearly averages. For next portion of the discussion, I will use a data trick that the Climate Alarmists use regularly. I am going to ignore the CO₂ data completely. Climate Alarmists just choose to ignore a large portion of the direct and indirect drivers associated with solar activity. I actually do believe that there is a contribution from CO₂ but

as you'll see, the temperature fluctuations can be closely modeled without factoring in CO₂. The monthly and yearly data are plotted on the previous page (Figure 2). The purple curve was developed to combine the TSI anomaly and the AMO Index. The math is simple. Prior to 1945, the TSI was given a weighting of 75% and the AMO Index was 25%, post 1945 the weighting was adjusted to 25/75 (TSI/AMO). The data was divided into two periods. The early data is characterized by a changing TSI, the later data has a much more stable TSI, and would therefore be affected more by the AMO.

If you focus in on the yearly data you get Figure 3 below.



The weighted TSI/AMO curve correlates very well to the consolidated temperature data sets (I'm bringing in the satellite data (UAH) into the discussion at this point). The rationale for ignoring the HadCrut4 data during the satellite period is simple. Satellite temperature estimates are more accurate and sample a much larger portion of the planet's surface and atmosphere. The satellite data has also been correlated with weather balloon temperature datasets. The difference between the HadCrut4 and UAH global temperature estimates is very close to the surface data manipulations associated with the homogenization process. The homogenization process (as discussed in my original paper) does not reflect the actual temperature measurements very well. Including the smaller contributions from the PDO (cyclical), UHIE (steadily increasing) and CO₂ (increasing but declining in strength exponentially) would tighten up the correlation over the satellite period very nicely.

Is this a rigorous proof that CO₂ has no effect on the climate? No. But given that I can model the temperature better than the IPCC climate models with a few straightforward assumptions that don't include CO₂ should be eye opening. The IPCC computer models have failed miserably in predicting the global temperatures for

the first 18 years of this century. And unless they begin recognizing the importance of solar fluctuations those models will continue to deviate further from reality.

Ignoring the coming, widely forecasted Grand Solar Minimum is exposing the entire world's population to extremely severe food shortages that could at least be partially alleviated if the problem was acknowledged. The shorter growing seasons associated with solar minimums is a severe issue for the entire northern hemisphere and we're wasting billions (projected to be trillions) on trying to limit CO₂ emissions (a key component of life on this planet that is close to plant starvation levels). As I discussed in my original paper, we will be grateful for whatever warmth that CO₂ has provided for us, but it won't be enough to offset all of the cold that comes along with a Grand Solar Minimum. The record snowfalls and cold temperature records globally over the last couple of years are just the beginning. We've only just started our descent into the Grand Solar Minimum. If a major volcanic eruption also occurs (and they do tend to occur during GSMs), the result will be absolutely devastating for the whole planet (rich and poor). Large volcanic eruptions/earthquakes are also associated with GSMs due to the planetary alignments (gravitational pulls) and cosmic ray fluctuations. I hope that doesn't happen, but we have no control over that process.

You can ignore my interpretations/opinions, but you won't be able to ignore Mother Nature. Within a few years the effects of the GSM will be very evident. And you won't have to wait another 82 years to confirm that the IPCC forecasts were wrong (assuming you somehow still believe that the model failures to date mean anything).

If you have not read my original document, I would strongly suggest that you do. The discussion focuses on a large cross-section of the available "Climate Change" data. Nowhere in the available data does CO₂ show up as primary driver of "Climate Change". In fact, the only forum where CO₂ drives the Climate is within the fantasy world of the IPCC's computer models. Computer models can only give you the answer that is programmed in by the operator. So as usual, I have a simple challenge for everyone (climate scientist or not). My mind can be changed with some real data, not computer models or unsubstantiated theory. But without real data to the contrary, I will continue to promote my position that human CO₂ emissions will not be disastrous for the planet and will in fact be very beneficial.

The original discussion can be accessed by either of the links below. The second link accesses the document through the Friends of Science website. Alternatively, just google "ronald davison climate".

<https://app.box.com/s/plb8rmt1xdmbwo4xxdccc5p4jevdc023>

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