From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: Advice Please
Date: Monday, 11 March 2019 11:21:00 AM

[redacted]

Send [redacted] this link: https://www.forbes.com/sites/startswithabang/2017/07/26/heartlands-6-reasons-to-be-a-climate-change-skeptic-are-six-demonstrable-lies/#4c30b51c6189

[redacted]

From: [redacted] <[redacted]gmail.com>
Sent: Monday, 11 March 2019 10:20 a.m.
To: [redacted] <[redacted]niwa.co.nz>
Cc: [redacted] <[redacted]>
Subject: Re: Advice Please

Yep - [redacted] sage advice is not to engage
Thanks [redacted]

[redacted]

—

On 10 Mar 2019, at 5:08 PM, [redacted] <[redacted]niwa.co.nz> wrote:

> Hi [redacted]
> I don't know that there is a lot of point continuing this discussion with [redacted] I don't think you can come up with any argument or evidence at all that would convince him.
> And [redacted] will not stay 'on topic'. If you point him to some evidence he is wrong about a specific issue, he will immediately raise other issues – like NIWA's 7SS or Mann's hockey stick.
> Also, I have had difficulty finding the discussion of this graph on Spencer's website, and a proper write-up of how the graph was produced. For all I know, he is comparing chalk and cheese.
> Ask [redacted] for the link where this graph first appears and is discussed (or do you know it?).
> <image002.jpg>
> And [redacted] Spencer's data is readily available – for mid- & lower- troposphere, and with various geographic breakdowns. See here:
> http://www.drroyspencer.com/2019/02/uah-global-temperature-update-for-january-2019-0-37-deg-c/
> Cheers
> [redacted]
>
> <imageec8bac.PNG> [redacted]
> National Institute of Water & Atmospheric Research Ltd (NIWA)
> 301 Evans Bay Parade, Greta Point, Wellington
> **Connect with NIWA:** niwa.co.nz Facebook Twitter LinkedIn Instagram
>
> To ensure compliance with legal requirements and to maintain cyber security standards, NIWA's IT systems are subject to ongoing monitoring, activity logging and auditing. This monitoring and auditing service may be provided by third parties. Such third parties can access information transmitted to, processed by and stored on NIWA's IT systems
>
> **From:** [redacted] <[redacted]gmail.com>
> **Sent:** Sunday, 10 March 2019 12:31 p.m.
> **To:** [redacted] <[redacted]niwa.co.nz>; [redacted] <[redacted]>
> **Cc:** [redacted]
> **Subject:** Fwd: Fwd: Advice Please
>
> Gents
>
> I will not do an immediate response. So [redacted] doesn't like Mike et als site...too bad.

[redacted] - if you want to read about [redacted] thoughts go to:
http://[redacted].com/

He is a [redacted]
services to agriculture

[redacted] - I would not bother with him unless you feel the motivation too - it would give him oxygen to boast. We'll deal with it - in time!

Best

[redacted]

-------- Forwarded Message --------
Subject: Fwd: Advice Please
Date: Sun, 10 Mar 2019 12:07:31 +1300
From:[redacted]
To:[redacted]@gmail.com>

[redacted]
I have had time to consider these two websites and have taken advice from colleagues. I remain skeptical (unconvinced of the AGW hypothesis)
1) Hansen's land based temp graphs seem to change over time - why? This reminds me of the similar mystery surrounding NIWAs 7SS?
2) I have read much about the Hockey Stick saga - I am not inclined therefore to take the site 'real-climate' too seriously.
3) I understand that the models are tuned to the land-based temp data. Sounds like poor science to me.
Lastly I am deeply disappointed with your recent suggestions in the NZ Herald that the press should not give any space to 'deniers' - "Freedom of Speech"
PS I did not take too long for Santer's gold standard to be exposed for what it is!.
Regards
[redacted]

> Dear [redacted]
> I recommend that you carefully read
> http://www.realclimate.org/index.php/archives/2018/06/30-years-after-hansens-testimony/
> and
> http://www.realclimate.org/index.php/climate-model-projections-compared-to-observations
> These discussions cover what you need to know
> [redacted]
> Chz
> [redacted]

Dr

[redacted]

"The only antidote to pseudo-science is science itself"
Carl Sagan

<image001.jpg> Virus-free. www.avast.com

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: Fwd: Advice Please
Date: Monday, 11 March 2019 10:08:00 AM

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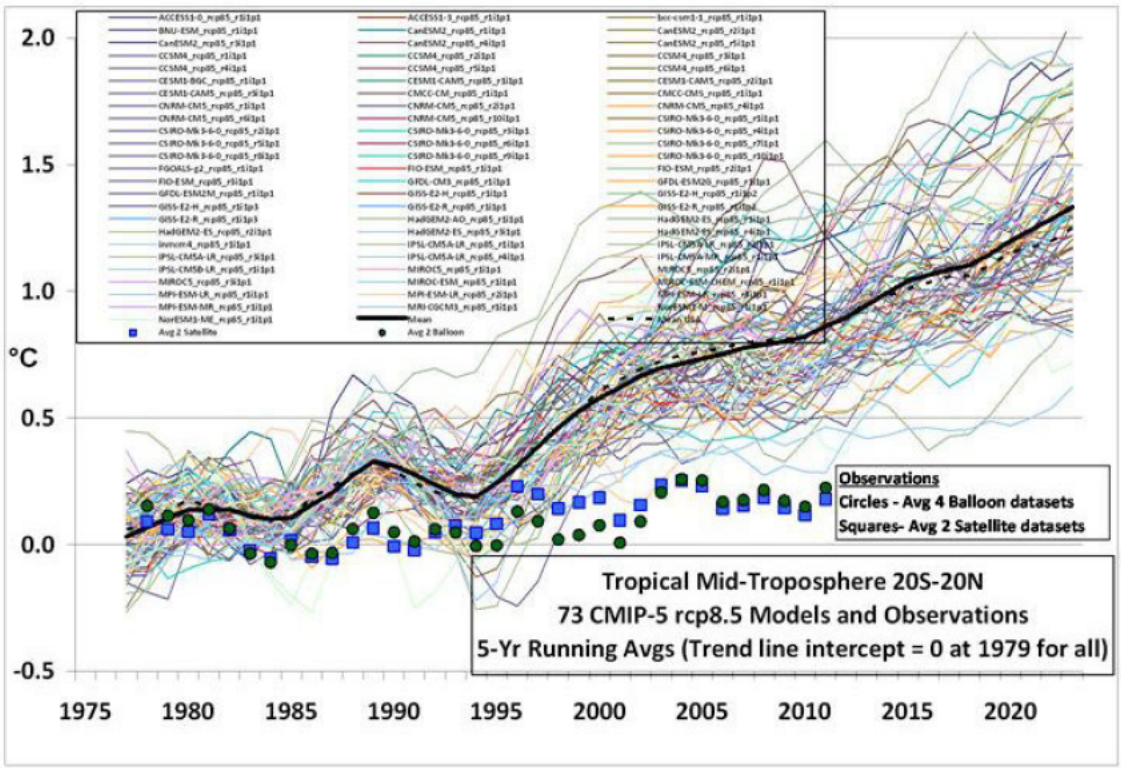

And [redacted] Spencer's data is readily available – for mid- & lower- troposphere, and with various geographic breakdowns. See here:
http://www.drroyspencer.com/2019/02/uah-global-temperature-update-for-january-2019-0-37-deg-c/
Cheers
[redacted]

From: [redacted] <[redacted]gmail.com>
Sent: Sunday, 10 March 2019 12:31 p.m.
To: [redacted] <[redacted]niwa.co.nz>; [redacted] <[redacted]>
Cc: [redacted]
Subject: Fwd: Fwd: Advice Please

Gents

I will not do an immediate response. So [redacted] doesn't like Mike et als site...too bad.

[redacted] - if you want to read about [redacted] thoughts go to:
http://[redacted]com/

He is a [redacted]

[redacted] - I would not bother with him unless you feel the motivation too - it would give him oxygen to boast. We'll

deal with it - in time!

Best

[redacted]

-------- Forwarded Message --------
Subject: Fwd: Advice Please
Date: Sun, 10 Mar 2019 12:07:31 +1300
From [redacted] <[redacted]>
To [redacted] <[redacted]gmail.com>

[redacted]
I have had time to consider these two websites and have taken advice from colleagues. I remain skeptical (unconvinced of the AGW hypothesis)
1) Hansen's land based temp graphs seem to change over time - why? This reminds me of the similar mystery surrounding NIWAs 7SS?
2) I have read much about the Hockey Stick saga - I am not inclined therefore to take the site 'real-climate' too seriously.
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Lastly I am deeply disappointed with your recent suggestions in the NZ Herald that the press should not give any space to 'deniers' - "Freedom of Speech"
PS I did not take too long for Santer's gold standard to be exposed for what it is!.
Regards
[redacted]

> Dear [redacted]
> I recommend that you carefully read
> http://www realclimate.org/index.php/archives/2018/06/30-years-after-hansens-testimony/
> and
> http://www realclimate.org/index.php/climate-model-projections-compared-to-observations
> These discussions cover what you need to know
> [redacted]
> Chz
> [redacted]
> CMIP5-73-models-vs-obs-20N-20S-MT-5-yr-means1.png
>
> Dr
> [redacted]

[redacted]

[redacted]

[redacted]

"The only antidote to pseudo-science is science itself"
Carl Sagan

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From: [redacted]
To: [redacted]
Subject: RE: Re: Comments Please
Date: Thursday, 25 October 2018 4:18:00 PM
Attachments: Allen_Hotspot-deduced-from-thermal-winds_NatureGeoSci2008.pdf
Santer_Tropical-Temperature-Trends_IJClim2008.pdf
Titchner_TroposphericTempTrends&HotSpot_JClim2009.pdf

Hi [redacted]
That's the trouble with people like [redacted] Challenge one statement, and they just move on to the next – it's never-ending.
A good reason for slowing down the turn-around.
I've been on leave for a couple of days so didn't respond to your query earlier this week about the tropical upper tropospheric temperature trends (the so-called 'hot spot').
For our own information as much as anything, I attach a few relevant papers. I leave it up to you if you want to forward anything further to [redacted] on this issue.

1. See this website with links to a number of papers on the issue, https://agwobserver.wordpress.com/2009/09/06/papers-on-tropical-troposphere-hotspot/. There is lots of discussion in the literature. A number of papers conclude that there are significant differences between the observed and modelled trends in tropical upper troposphere temperatures, but a number of papers also conclude the trends are consistent within their uncertainty bounds.
2. See a few relevant papers (attached) which I particularly like.
3. Also, see Tamino again, who comments that the UAH (Alabama, Spencer-territory) satellite trends seem consistently smaller than both RSS (the 'other' satellite series) and ground-based observations, https://tamino.wordpress.com/2018/10/17/global-temperature-in-the-air-up-there/. It is the UAH data shown on the graphic [redacted] supplied.

And regarding one of [redacted] 'new' questions about the HadCRU errors (e.g., https://wattsupwiththat.com/2018/10/11/bombshell-audit-of-global-warming-data-finds-it-riddled-with-errors/), I suspect that John MacLean (we remember him from the rubbish paper with de Freitas on ENSO and global warming) was finding errors in the global INPUT data sets that the Hadley Centre has to assimilate. That's why they have quality-control algorithms in place. I haven't read MacLean's thesis (who has?), but has he checked if these input errors have propagated through to the output Hadley analysis?
Cheers
[redacted]

From: [redacted] <[redacted]gmail.com>
Sent: Wednesday, 24 October 2018 7:58 p.m.
To: [redacted] <[redacted]niwa.co.nz>; [redacted] <[redacted]>
Subject: Fwd: Re: Comments Please

I think I'll slow down the turn around time...

[redacted]

-------- Forwarded Message --------
Subject: Re: Comments Please
Date: Wed, 24 Oct 2018 19:32:46 +1300

From: [redacted] <[redacted]>
To: [redacted] <[redacted]gmail.com>

[redacted]

Many thanks for coming back to me on this.
My understanding is that Roy Spencer is comparing model output with observed troposphere temps (satellite data) .The Climate lab data compares the model data with the surface temp data.
I also understand that the troposphere is the 'place to go' if looking for evidence of warming.
In any case the IPCC (Text box 9.2) says that 111 of 114 climate model runs predicted higher temperatures for the previous 15 years than the data from observations shows. In other words IPCC accepts this discrepancy.
Furthermore I am lead to believe that the IPCC models are 'tuned' to the surface data so it should be no surprise that they reproduce the agreement.
In addition it has been recently found that the HadCrut data 4.5 set contains fatal errors!!! This appears to be the case with many of the historical surface data?
This issue (model v observed) goes to the heart of the Global Warming issue. Hence I am keen to get to the bottom of it.
Regards

[redacted]

"The only antidote to pseudo-science is science itself"
Carl Sagan

> On 24/10/2018, at 8:50 AM, [redacted] <[redacted]gmail.com> wrote:
>
> [redacted]
>
> There's plenty of counter-argument out there about this graphic, and related ones on Spencer's web site. And what happens when the latest 4-5 years are added?
> An updated comparison of global temperatures is here
> http://www.climate-lab-book.ac.uk/comparing-cmip5-observations/
> and see the more in-depth discussion at
> https://www.carbonbrief.org/analysis-how-well-have-climate-models-projected-global-warming
> On 23/10/2018 8:11 a.m., [redacted] wrote:
>
> > [redacted]
> >
> > Lets accept the view that the Heller data is questionable.
> > How about the graphic below which appears on Roy Spencer's web-site?
> >
> > [redacted]
> > <F3901B29-9F09-4617-B577-4B71F2066D89.png>
> >
> > [redacted]

[redacted]

[redacted]

[redacted]

"The only antidote to pseudo-science is science itself"
Carl Sagan

On 16/10/2018, at 5:29 AM, [redacted]
<[redacted]gmail.com> wrote:

Dear [redacted]

All I can add is that the US graphs of maximum temperature look nothing like those published by Menne et al (2010) (attached).

The website directed by you to me to is run by a Tony Heller, who also goes under another name as Steven Goddard. See:

http://www.seattleweekly.com/news/climate-change-denier-testifies-for-40-minutes-in-washington-senate-environment-committee/,

and https://www.desmogblog.com/steven-goddard

And this is what Dr Grant Foster, has to say about Tony Heller: https://tamino.wordpress.com/2018/08/08/usa-temperature-can-i-sucker-you/

Regards

[redacted]

On 8/10/2018 5:03 p.m., [redacted] wrote:

[redacted]

I would appreciate your comments re these data/graphs

[redacted]

[redacted]

[redacted]

"The only antidote to pseudo-science is

science itself"
Carl Sagan

--

[redacted]

[redacted]

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From: [redacted]
To: [redacted]
Subject: RE: Comments Please
Date: Tuesday, 23 October 2018 5:41:22 PM

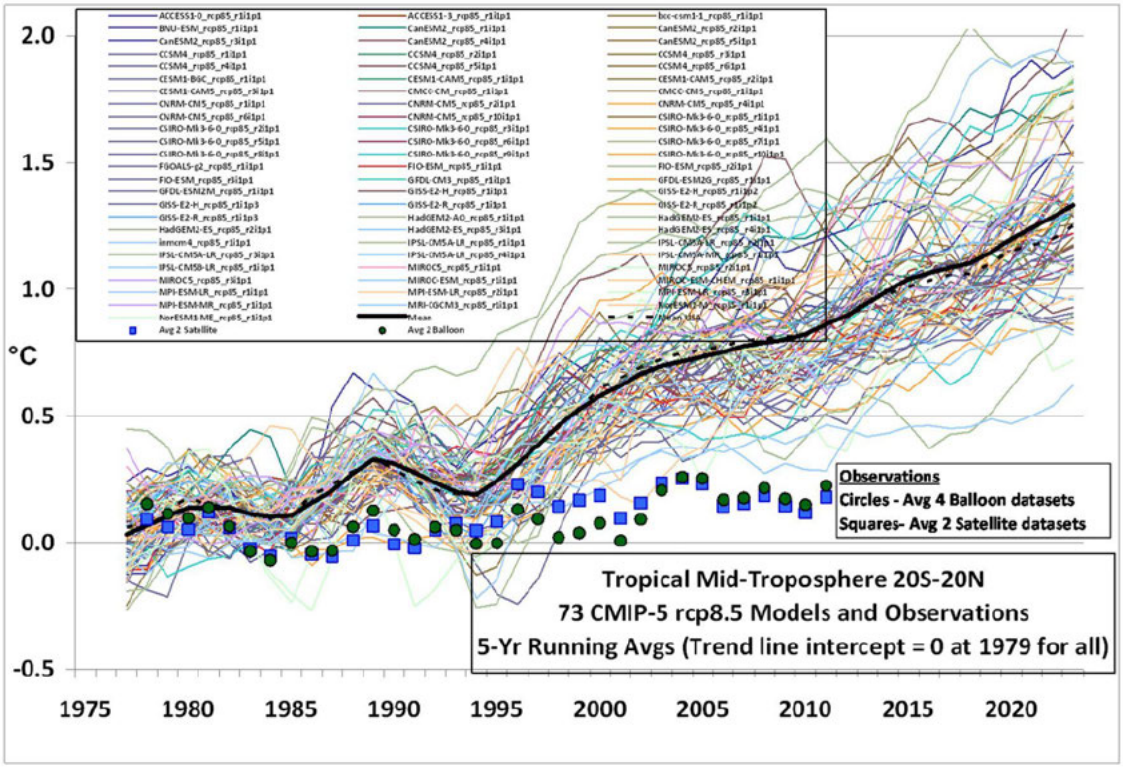
Hi [redacted] –
Right. There's plenty of counter-argument out there about this graphic, and related ones on Spencer's web site. Do we know that the model time series are also for the tropical mid-troposphere? And what happens when the latest 4-5 years are added?
An updated comparison of global temperatures is here
http://www.climate-lab-book.ac.uk/comparing-cmip5-observations/
and see the more in-depth discussion at
https://www.carbonbrief.org/analysis-how-well-have-climate-models-projected-global-warming
Cheers
[redacted]

From: [redacted] <[redacted]gmail.com>
Sent: Tuesday, 23 October 2018 11:35 AM
To: [redacted] <[redacted]niwa.co.nz>; [redacted] <[redacted]>
Subject: Fwd: Comments Please

Please note new e-mail [redacted]gmail.com
[redacted]
—

Begin forwarded message:

> **From:** [redacted] <[redacted]>
> **Date:** 23 October 2018 at 8:11:07 AM GMT+10
> **To:** [redacted] <[redacted]gmail.com>
> **Subject: Re: Comments Please**
>
> [redacted]
> Lets accept the view that the Heller data is questionable.
> How about the graphic below which appears on Roy Spencer's web-site?
> [redacted]



[redacted]

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On 16/10/2018, at 5:29 AM, [redacted] <[redacted]gmail.com> wrote:

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All I can add is that the US graphs of maximum temperature look nothing like those published by Menne et al (2010) (attached).

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http://www.seattleweekly.com/news/climate-change-denier-testifies-for-40-minutes-in-washington-senate-environment-committee/,

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And this is what Dr Grant Foster, has to say about Tony Heller:

https://tamino.wordpress.com/2018/08/08/usa-temperature-can-i-sucker-you/

Regards

[redacted]

On 8/10/2018 5:03 p m., [redacted] wrote:

[redacted]

I would appreciate your comments re these data/graphs

[redacted]

[redacted]

"The only antidote to pseudo-science is science itself"
Carl Sagan

[redacted]

Virus-free. www.avast.com

From: [redacted]
To: [redacted]
Subject: FW: Disparities in climate observations and simulations
Date: Wednesday, 19 June 2013 9:41:56 PM

[redacted]

For your information.

Regards – [redacted]

From: [redacted] <[redacted]niwa.co.nz>
Date: Wednesday, 19 June 2013 9:32 PM
To: [redacted]
Cc: [redacted] <[redacted]
Subject: Re: Disparities in climate observations and simulations

Dear [redacted]

Regarding your email message of Monday 17 June:

1. A point of clarification, about point 12 in your message: Dr [redacted] gave me a link to http://www.drroyspenser.com. I assumed the matter of interest was the article dated June 6th 2013 which at that stage was the first one in that blog. It included a graph on which were plotted various individual points from averaging a set of balloon data sets and averaging a set of satellite data sets, together with individual lines showing outputs from many climate models run for RCP8.5 scenarios. According to the figure caption the graph was for the tropical mid-troposphere from 20S to 20N, and contained 5-year running averages. Dr Spenser stated that the models and observations had been plotted "so that their respective 1979-2012 trend lines all intersect at 1979". This is the graph I commented on, and it did include both radiosonde ("balloon") data and satellite data.

2. I am aware of a history of debate about measurements of tropical mid-troposphere temperatures, and I provided Dr [redacted] with a reference to a 2011 paper by Thorne and colleagues which includes discussion of this. The Thorne et al paper provides references to the original literature. Most of the model vs data intercomparison period in Dr Spencer's graph (1977 to 2011 if I am correct in assuming the x-axis of the graph begins at 1975) falls within the period discussed by Thorne et al, so their comments about observational uncertainty in the tropics are pertinent to Dr Spencer's graph.

3. I commented to Dr [redacted] that: "In my view the Spencer blog article does not take into account the published literature on measurement-based estimates of temperature trends in the tropical troposphere and on comparison of these with climate model simulations". That is still my view - I am surprised that a blog article which claims an "epic fail" in models on the basis of a plot showing model results and observational data, does not include any comment on the (widely discussed in the scientific literature) issue of the accuracy/ uncertainty of the observed data, and does not comment on the range of observation-based estimates in the literature of rate of change of tropical lower tropospheric temperature.

4. I do see comparisons between model results and observations as a very useful field of study, provided these studies do include considerations of observational uncertainty, effect of natural

variability on trend estimates etc. If such studies do identify real differences (and hopefully also reasons for them) that will point modelers towards aspects where they can work on improvements to their models.

5. As I stated in my comments to Dr [redacted] Thorne et al point out that the 2007 IPCC assessment considered that ambiguity remained in the tropics. I look forward to seeing the expert assessment on this matter of modeled and observed trends in the tropical mid-troposphere in the final published copy of the IPCC AR5 WG1 report later this year (the copy in which the authors will have considered and addressed the review comments on earlier drafts).

6. I have copied this response to Dr [redacted] as a somewhat longer discussion of matters related to the June 6th blog article by Dr Spenser.

Regards - [redacted]

From: [redacted]
Date: Monday, 17 June 2013 9:30 PM
To: [redacted] <[redacted]niwa.co.nz>
Cc: [redacted] <[redacted] [redacted]
<[redacted]
[redacted]
Subject: Disparities in climate observations and simulations

Dear [redacted]

1. I'm writing on behalf of the New Zealand Climate Science Coalition, not with any claim to climate expertise, but having listened to some expert colleagues.

2. The Coalition has received the correspondence you recently had with Dr [redacted] concerning Dr Roy Spencer's comparisons of climate model output with recent global temperature records.

3. The correspondence came to us from our good friend Dr [redacted] who had sent one of the Spencer graphs to Dr [redacted] his colleague of long standing, saying the graph was a significant development in the climate debate and urging him to "send it to NIWA" so they might hear of it. You kindly wrote a response, which he sent back to Dr [redacted] who in turn passed it to Coalition climate specialists for an opinion.

4. We appreciate we are subjecting your correspondence to an unintended public scrutiny but hope that its significance inspires your indulgence.

5. In your reply to Dr [redacted] you refer to the early discrepancies between the global surface temperature records from weather stations and from the then-newly-launched satellite microwave sounding units. Those discrepancies were, as you say, resolved.

6. You refer to Dr Spencer's comparison of "temperature estimates in the tropical mid-troposphere (20°S–20°N) from various radiosonde balloon and satellite measurements from 1977–2010, with climate model simulations for the same period," and his claim that there is "substantial disagreement

between the measurements and the models."

7. You refute that claim of divergence by citing an article, "Tropospheric temperature trends: History of an ongoing controversy" (Thorne et al.), published online in November 2010.

8. But Dr Spencer made those comparisons in April and June 2013 using satellite data from 1979–2012 and model projections for 1975–2025. Dr Spencer notes the comparisons are "courtesy of John Christy and based upon data from the KNMI Climate Explorer." The KNMI Climate Explorer is at http://climexp.knmi.nl/start.cgi?id=someone@somewhere.

9. So the article you cite to refute Spencer's claim of divergence, which article was concerned with reconciling differences in vertical tropospheric temperature ranges rather than between surface and satellite versions of the lower tropospheric temperature record, cites the IPCC AR4 published in 2007—six years earlier.

10. Thorne et al.'s supporting references to Douglass et al. (2008) and Santer et al. (2008) are, similarly, to papers that antedate Spencer's graphs and data. We do not understand your references.

11. In any case, the progression of global temperatures since 2010 has extended the divergence beyond any previous reconciliation.

12. Incidentally, it seems we may be talking about slightly different graphs—the graph you describe as from Dr [redacted] does not match the graph he was sent, though they bear some resemblance—you describe tropical models against radiosonde data but Dr [redacted] sent him an earlier graph with global models versus satellite data. I mention this so we may both be aware of it, but it doesn't matter.

13. What does matter is the increasing divergence in global temperature evolution between model output and observation. That is evident in several of Dr Spencer's graphs. Similar divergence appears in other sources, including the Climate Lab Book at http://www.climate-lab-book.ac.uk/2013/comparing-observations-and-simulations-again/ funded by the National Centre for Atmospheric Science in the UK and, concerning the tropics, the IPCC WGI Fifth Assessment Report, Second Order Draft, Chapter 9, appears to verify a divergence when it says:

> 9.4.1.3.2 Upper tropospheric temperature trends.
> 'Nevertheless, almost all model ensemble members show a warming trend in both LT and MT larger than observational estimates (McKitrick et al., 2010; Po-Chedley and Fu, 2012; Santer et al., 2012).'
> 'In summary, there is high confidence (robust evidence although only medium agreement) that most, though not all, CMIP3 and CMIP5 models overestimate the warming trend in the tropical troposphere during the satellite period 1979–2011.'

14. The conclusions of McKitrick et al. (2010) state: "Over the interval 1979 to 2009, model-projected temperature trends are two to four times larger than observed trends in both the lower and mid-troposphere and the differences are statistically significant at the 99% level." Which is a robust indication that the GCMs have yet to develop high predictive skill.

15. J. Knight, J.J. Kennedy, C. Folland, G. Harris, G.S. Jones, M. Palmer, D. Parker, A. Scaife, and P. Stott, 2009: Do global temperature trends over the last decade falsify climate predictions? [in "State of the Climate in 2008"]. Bull. Amer. Meteor. Soc., 90 (8), S1–S196, said: "The simulations rule out (at the 95%

level) zero trends for intervals of 15 yr or more, suggesting that an observed absence of warming of this duration is needed to create a discrepancy with the expected present-day warming rate." That period has now been exceeded, which by this statement invalidates the models.

16. We note that your response to Dr [redacted] fails to address the divergence described, and thus neither explains nor excuses the poor performance of the models. This betrays the natural instinct when noting in these graphs the clear disparity between models and observations—which is to ask: why are they so different for so long?

17. It may be that we do not know, which means the models cause the disparity and thus fail the test of reality.

18. Please forgive the bluntness of this inquiry, but there's nothing else for it: Do you acknowledge the divergence that is evident in the above and can you account for it? If you cannot account for it, does the divergence change your advice to the government?

19. The evidence of a problem here is plain, unambiguous and easy to understand, even without scientific knowledge, because the graph contains everything required to be known. The problem is a lack of credibility in the predictions of global warming because they have failed.

20. We note the continuing lengthy stasis in temperature rise this millenium. One might claim 16 years without significant warming, depending on the choice of dataset and error margin, or 17, 18, 20 or even 25 years.

21. We note the EU has abandoned its commitments to reducing its carbon footprint, approved fracking for natural gas and plans new coal-fired power stations as higher costs of fuel and power lose business to the US. The strongest incentive for this retreat is the knowledge that global warming no longer looks dangerous.

22. Do not let us watch our chief climate scientist ignore an opportunity to address the obvious. The divergence between models and reality is simple to understand and is quickly becoming common knowledge because the graph is so simple.

23. This is an opportunity to announce possibly the greatest good news story of modern times—that global warming has paused and the "greatest danger ever to face humanity" has faded. There is no doubt of this, because global warming has failed to rise irresistibly higher under record amounts of atmospheric carbon dioxide. If we are in luck, global warming is even over, though time will tell.

24. This is very good news. We can reassign our budgets to do other vital work and relieve suffering, while our politicians can search out new things to tax but leave our energy supplies unencumbered for our improvement.

Yours faithfully,

[redacted]

From: [redacted]
To: [redacted]
Subject: RE: Emailing: Roy Spencer, PhD
Date: Friday, 14 June 2013 4:37:00 PM
Attachments: image009.png

Hi [redacted]

Just a comment.

On Spencer's site, he shows Christy's figure but doesn't give any details about how the analysis was done. I would note the following:

i) Not clear what 'mid-troposphere' stands for – each models will have temperatures at different vertical levels. (But maybe the vertical averaging doesn't matter too much because he is focussing on trends).

ii) The models are all labelled as running the RCP 8.5 scenario, but the RCP runs start from 2006, so it will have been necessary to join the 'historical' run (which ends 2005) to the RCP8.5 projection.

iii) The satellite and balloon observations look a bit odd – I don't see them lining up with the expected warming in the 1982/83 and 1997/98 El Ninos, or the cooling following the 1991 Pinatubo eruption. The models consistently show a dip in temperature following Pinatubo (and don't have prescribed El Ninos). The 5-year running averages (I think plotted at the END year) could confuse the year-to-year variability, though.

iv) Spencer has aligned the curves so the TREND lines at 1979 go through the same point. This is dubious and could be influenced by end-point effects (eg, a warm start because of the 1977/78 El Nino).

[redacted]

From: [redacted]
Sent: Friday, 14 June 2013 3:29 p.m.
To: [redacted]
Subject: FW: Emailing: Roy Spencer, PhD

For your info - [redacted]

From: [redacted] <[redacted]niwa.co.nz>
Date: Friday, 14 June 2013 3:18 PM
To: [redacted] <[redacted]>
Subject: Re: Emailing: Roy Spencer, PhD

No problems [redacted] – happy to help. But based on previous experience also keen to leave an email trail regarding the statements [redacted] made in the email from him that you forwarded.

Regards - [redacted]

From: [redacted] <[redacted]>
Date: Friday, 14 June 2013 3:11 PM
To: [redacted] <[redacted]niwa.co.nz>
Subject: RE: Emailing: Roy Spencer, PhD

Sorry to involve you in this [redacted] but these people hold some sway in the ag community and deserve to be refuted or at least brought up to date cheers [redacted]

[redacted]

From: [redacted] [mailto:[redacted]niwa.co.nz]
Sent: Friday, 14 June 2013 2:36 p.m.
To: [redacted]
Subject: Re: Emailing: Roy Spencer, PhD

Hi [redacted]

Thanks for the info in your latest email message. By the way I did not attack Spencers' religious beliefs. You asked me who he was, I included some material from Wikipedia about his views. I made no value judgements about these. If Wikipedia had been wrong I assume Spencer or others would have approached them seeking a correction. I also made the point that Spenser has a substantial journal publication record.

Regarding [redacted] comments below about data: The point I made was that the published literature indicates there is substantial observational uncertainty in the tropics. That is relevant to the interpretation of the graphic from Spencer's web page – as is the other point I made which is that other researchers have published significantly different conclusions from Spencer's, in published papers in peer-reviewed journals rather than in unrefereed web blogs.

Regards - [redacted]

From: [redacted] <[redacted]>

Date: Friday, 14 June 2013 1:37 PM
To: [redacted] <[redacted]niwa.co.nz>
Subject: FW: Emailing: Roy Spencer, PhD
Fyi this is what others think in NZ cheers [redacted]

[redacted]

From: [redacted] [mailto[redacted]@xtra.co.nz]
Sent: Friday, 14 June 2013 11:49 a.m.
To: [redacted]
Subject: Emailing: Roy Spencer, PhD

[redacted] & [redacted]

Roy Spencer is a respected climatologist. The information that he presents below are assessments of the climate models (no less than 73 of them) which are those run by most of the major research groups in the world, and as used by the IPCC.

It is an insult that [redacted] attacks Spencer's religious beliefs (putative beliefs), and comes up with little to refute the actual data on warming. When in doubt look at the data.

[redacted] it is also an unfortunate comment that you have made "don't believe everything you read on the web" Which one of the models, or which data do you believe we shouldn't believe? The IPCC in their draft AR5 report had a similar figure. I will look it out and send it to you.

The same story is told!!

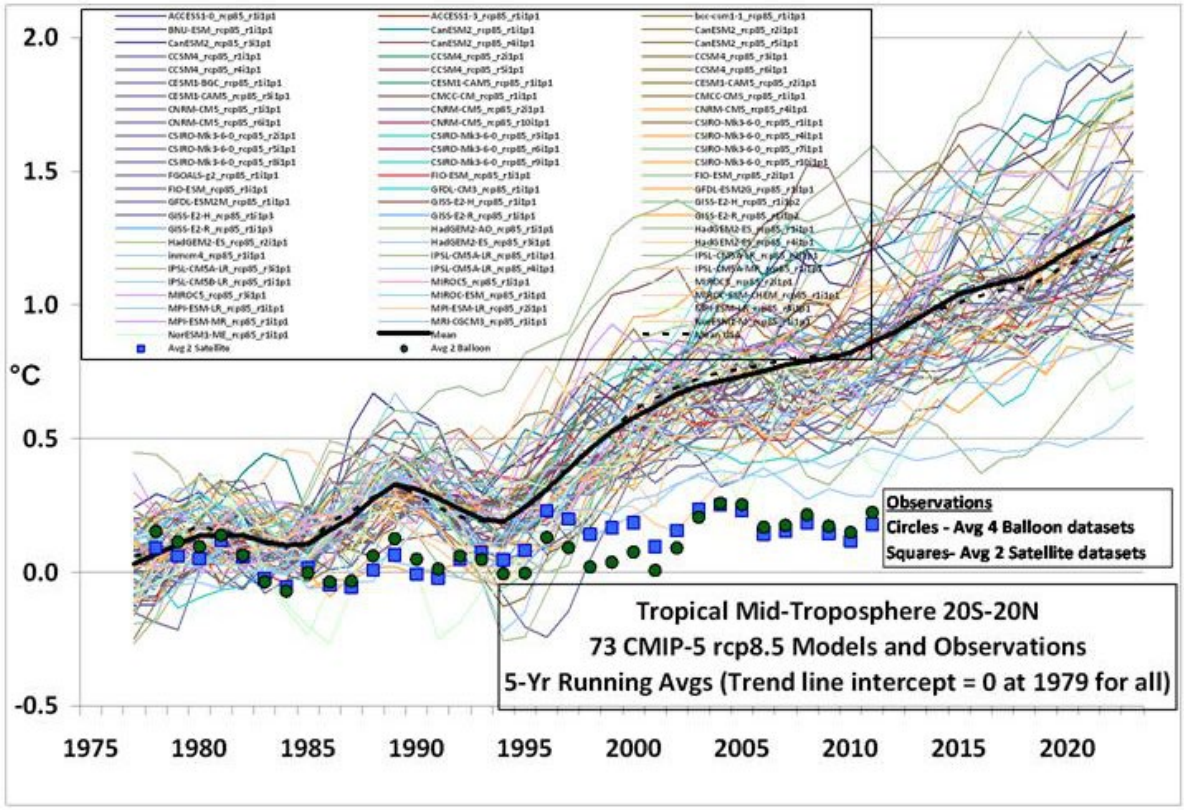
Cheers,

[redacted]

STILL Epic Fail: 73 Climate Models vs. Measurements, Running 5-Year Means

June 6th, 2013

In response to those who complained in my recent post that linear trends are not a good way to compare the models to observations (even though the modelers have claimed that it's the long-term behavior of the models we should focus on, not individual years), here are running 5-year averages for the tropical tropospheric temperature, models versus observations (click for full size):



In this case, the models and observations have been plotted so that their respective 1979-2012 trend lines all intersect in 1979, which we believe is the most meaningful way to simultaneously plot the models' results for comparison to the observations.

In my opinion, the day of reckoning has arrived. The modellers and the IPCC have willingly ignored the evidence for low climate sensitivity for many years, despite the fact that some of us have shown that simply confusing cause and effect when examining cloud and temperature variations can totally mislead you on cloud feedbacks (e.g. Spencer & Braswell, 2010). The discrepancy between models and observations is not a new issue…just one that is becoming more glaring over time.

It will be interesting to see how all of this plays out in the coming years. I frankly don't see how the IPCC can keep claiming that the models are "not inconsistent with" the observations. Any sane person can see otherwise.

If the observations in the above graph were on the UPPER (warm) side of the models, do you really believe the modelers would not be falling all over themselves to see how much additional surface warming they could get their models to produce?

Hundreds of millions of dollars that have gone into the expensive climate modelling enterprise has all but destroyed governmental funding of research into natural sources of climate change. For years the modelers have maintained that there is no such thing as natural climate change…yet they now, ironically, have to invoke natural climate forces to explain why surface warming has essentially stopped in the last 15 years!

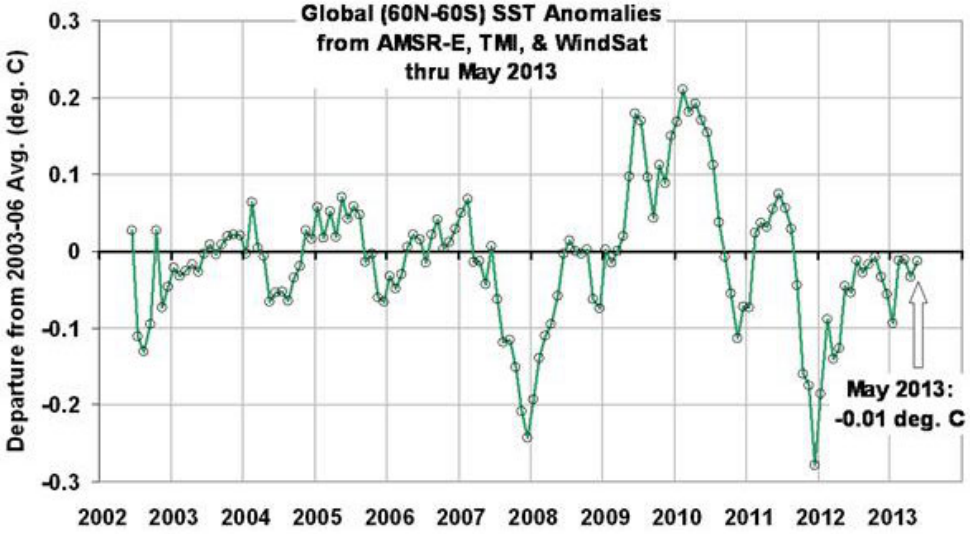
Forgive me if I sound frustrated, but we scientists who still believe that climate change can also be naturally forced have been virtually cut out of funding and publication by the 'humans-cause-everything-bad-that-happens' juggernaut. The public who funds their work will not stand for their willful blindness much longer.

Posted in Blog Article | 213 Comments ?

Global Microwave SST Update for May 2013: -0.01 deg. C

June 5th, 2013

The satellite-based microwave global average sea surface temperature (SST) update for May 2013 is -0.01 deg. C, relative to the 2003-2006 average (click for large version):



The anomalies are computed relative to only 2003-2006 because those years were relatively free of El Nino and La Nina activity, which if included would cause temperature anomaly artifacts in other years. Thus, these anomalies cannot be directly compared to, say, the Reynolds anomalies which extend back to the early 1980s. Nevertheless, they should be useful for monitoring signs of recent ocean surface warming, which appears to have stalled since at least the early 2000's. (For those who also track our lower tropospheric temperature ["LT"] anomalies, these SST anomalies average about 0.20 deg. C cooler than LT since mid-2002, but there is considerable variability in that number).

The SST retrievals come from Remote Sensing Systems (RSS), and are based upon passive microwave observations of the ocean surface from AMSR-E on NASA's Aqua satellite, the TRMM satellite Microwave Imager (TMI), and WindSat. While TMI has operated continuously through the time period (but only over the tropics and subtropics), AMSR-E stopped nominal operation in October 2011, after which Remote Sensing Systems patched in SST data from WindSat. These various satellite SST datasets have been carefully intercalibrated by RSS.

Despite the relatively short period of record, I consider this dataset to be the most accurate depiction of SST variability over the last 10+ years due to these instruments' relative insensitivity to contamination by clouds and aerosols at 6.9 GHz and 10.7 GHz.

Posted in Blog Article | 18 Comments ?

FLASH! Global warming causes record-wide tornadoes!

June 4th, 2013

Just thought I'd try to be the first the make the connection between the record wide (2.6 miles) EF5 tornado near Oklahoma City last Friday and Global Warming. (Click the above photo for the full story).

Of course, as I have discussed before, the missing ingredient in tornadoes is usually a cool air mass nearby. If

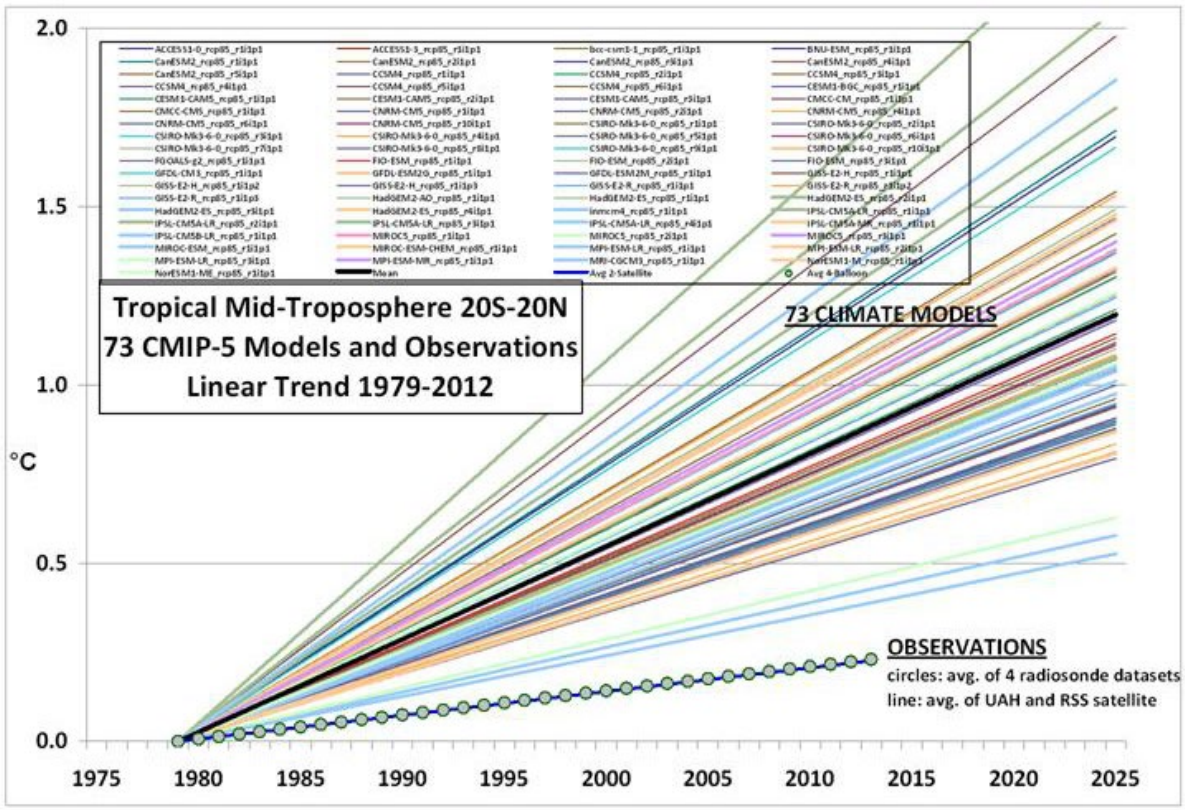
warm humid air was the missing ingredient, the tropics would be filled with tornadic thunderstorms…which is not the case.

Posted in Blog Article | 9 Comments ?

EPIC FAIL: 73 Climate Models vs. Observations for Tropical Tropospheric Temperature

June 4th, 2013

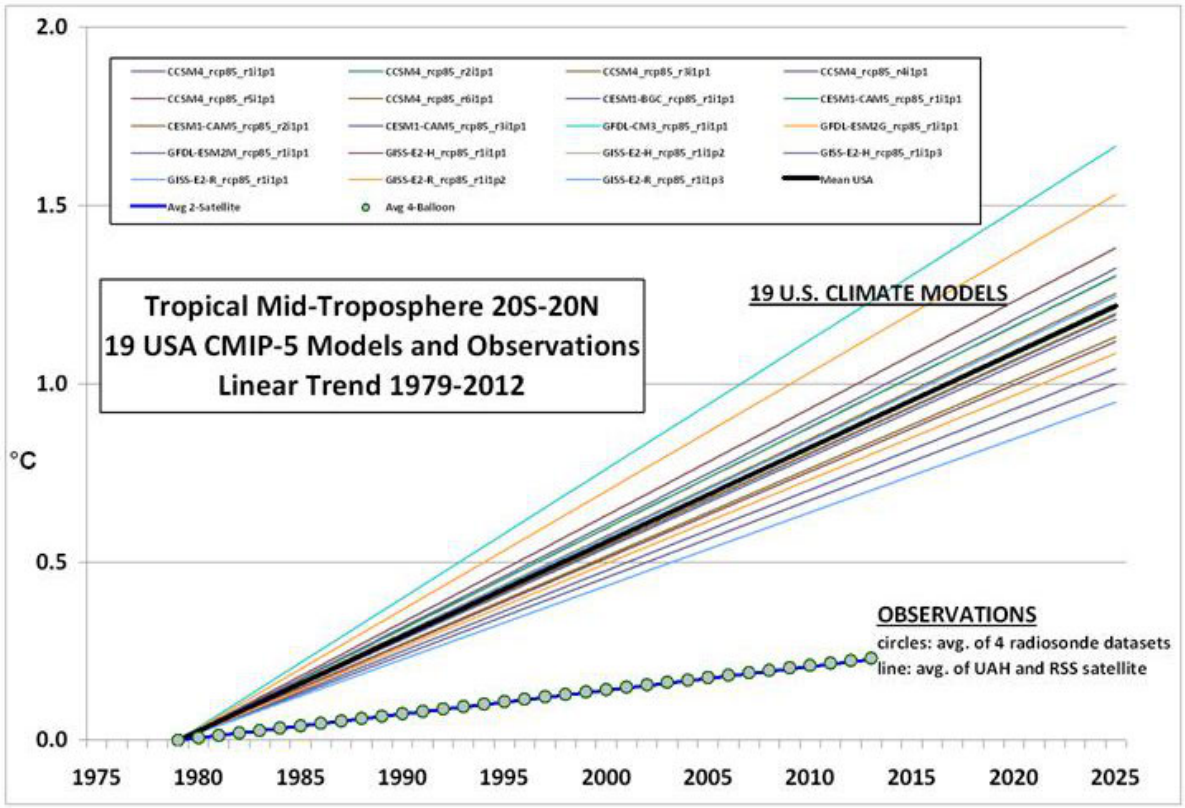
Courtesy of John Christy, a comparison between 73 CMIP5 models (archived at the KNMI Climate Explorer website) and observations for the tropical bulk tropospheric temperature (aka "MT") since 1979 (click for large version):



Rather than a spaghetti plot of the models' individual years, we just plotted the linear temperature trend from each model and the observations for the period 1979-2012.

Note that the observations (which coincidentally give virtually identical trends) come from two very different observational systems: 4 radiosonde datasets, and 2 satellite datasets (UAH and RSS).

If we restrict the comparison to the 19 models produced by only U.S. research centers, the models are more tightly clustered:



Now, in what universe do the above results not represent an epic failure for the models?

I continue to suspect that the main source of disagreement is that the models' positive feedbacks are too strong…and possibly of even the wrong sign.

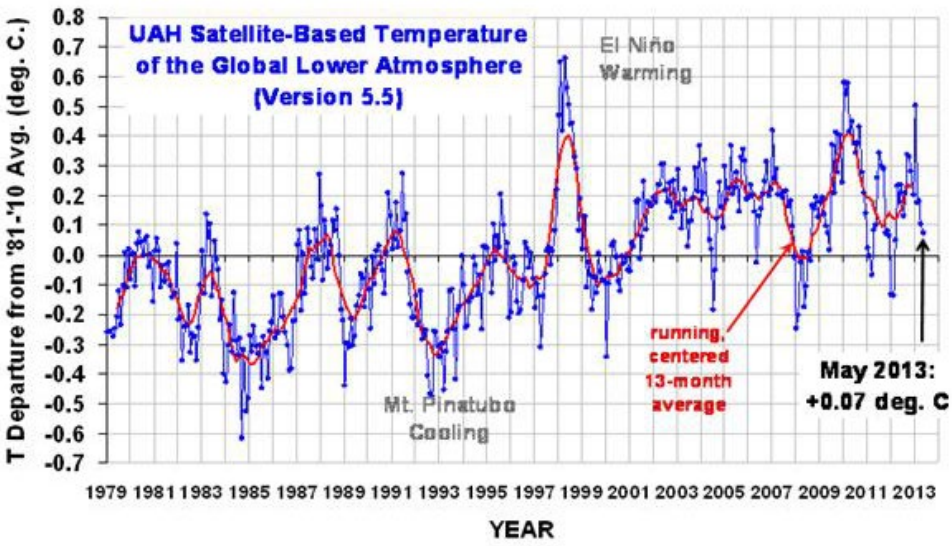
The lack of a tropical upper tropospheric hotspot in the observations is the main reason for the disconnect in the above plots, and as I have been pointing out this is probably rooted in differences in water vapor feedback. The models exhibit strongly positive water vapor feedback, which ends up causing a strong upper tropospheric warming response (the "hot spot"), while the observation's lack of a hot spot would be consistent with little water vapor feedback.

Posted in Blog Article | 125 Comments ?

UAH Global Temperature Update for May 2013: +0.07 deg. C

June 4th, 2013

Our Version 5.5 global average lower tropospheric temperature (LT) anomaly for May, 2013 is +0.07 deg. C, down a little from +0.10 deg. C in April (click for large version):



The global, hemispheric, and tropical LT anomalies from the 30-year (1981-2010) average for the last 17 months are:

YR MON GLOBAL NH SH TROPICS
2012 1 -0.134 -0.065 -0.203 -0.256
2012 2 -0.135 +0.018 -0.289 -0.320
2012 3 +0.051 +0.119 -0.017 -0.238
2012 4 +0.232 +0.351 +0.114 -0.242
2012 5 +0.179 +0.337 +0.021 -0.098
2012 6 +0.235 +0.370 +0.101 -0.019
2012 7 +0.130 +0.256 +0.003 +0.142
2012 8 +0.208 +0.214 +0.202 +0.062
2012 9 +0.339 +0.350 +0.327 +0.153
2012 10 +0.333 +0.306 +0.361 +0.109
2012 11 +0.282 +0.299 +0.265 +0.172
2012 12 +0.206 +0.148 +0.264 +0.138
2013 1 +0.504 +0.555 +0.453 +0.371
2013 2 +0.175 +0.368 -0.018 +0.168
2013 3 +0.183 +0.329 +0.038 +0.226
2013 4 +0.103 +0.120 +0.086 +0.167
2013 5 +0.074 +0.162 -0.013 +0.113

Posted in Blog Article | 17 Comments ?

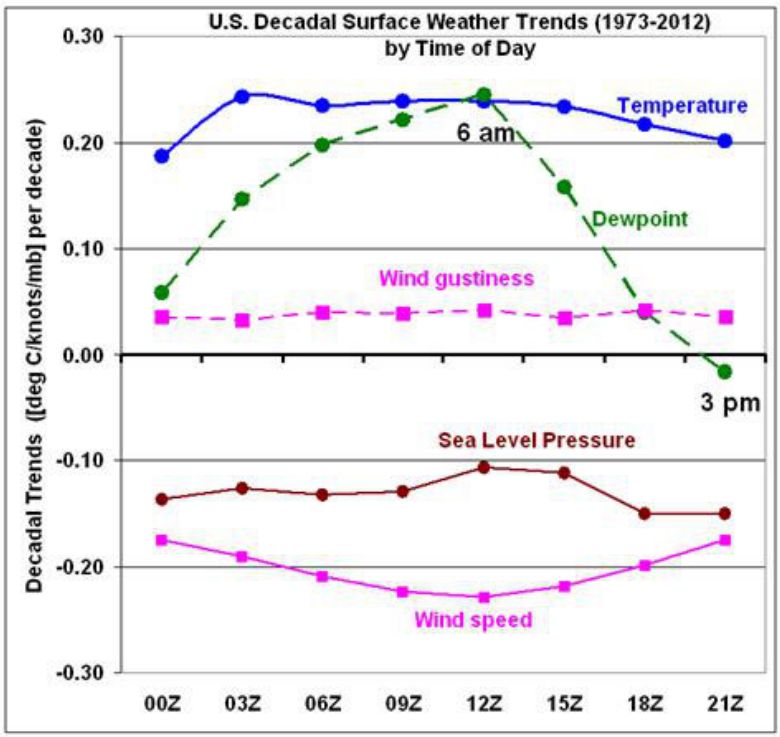
Diurnal Trends in Dewpoint Averaged over the U.S. Since 1973

June 4th, 2013

The Integrated Surface Hourly (ISH) weather data I have described before allows one to examine how various surface weather elements have changed as a function of time of day. (The ISH data volume is very large and it is not a trivial task to decode and analyze many years of it.) Three-hourly synoptic weather observations have been made at many U.S. weather stations for at least 40 years: 1973 seems to be the year when the number of stations reached a fairly large number, and so that is the year my analyses begin with.

I have previously mentioned that ISH surface data shows U.S. warming since 1973 (primarily a winter phenomenon, due to unusually cold winters in the 1970s), and a curious decrease in surface wind speed.

Here I'd like to point out another curiosity: while the dewpoint temperature has increased in step with air temperature at 12Z (around 6 a m.), it has increased much less so at other times of the day, and even decreased slightly at 21Z (around 3 p m.), during the period 1973-2012:



Assuming that dewpoint sensor design changes over the years have not introduced a diurnally varying measurement bias, a natural question arises: what would cause afternoon dewpoints to not rise in the face of warming both day and night? (Note I have not made any adjustments for sensor changes, siting changes, or urbanization in the above plot).

The first explanation that comes to my mind is a change in daytime convective mixing of the troposphere. If there is a slight increase in the depth of convective mixing, then drier (lower dewpoint) air aloft will be mixed down toward the surface. Such a change would probably also be associated with deeper moist convection and probably an increase in heavy rain rates, evidence for which has been claimed elsewhere (e.g. here). The implication of such a change for climate feedbacks is complicated and not obvious.

A second possibility is a long-term decrease in middle and upper tropospheric humidity, and no increase in convective mixing. In this case, daytime mixing would bring down the lower humidity air to the surface from the same altitude as before. There is some radiosonde evidence for such a decrease in absolute humidities above the turbulent boundary layer (e.g. Paltridge, 2009). If real, such a decrease might well result in negative water vapor feedback, since a small decrease in mid- and upper tropospheric humidity can have a natural radiative cooling effect which outweighs the warming from a larger increase in lower tropospheric humidity (e.g. Spencer and Braswell, 1997; Miskolczi, 2010). Of course, all climate models exhibit strongly positive water vapor feedback, approximately doubling the direct warming effect of increasing CO2 alone.

I don't have a strong opinion on which of these possibilities (sensor problems, deeper convection, or a dryer mid- and upper troposphere) is more likely. Too little information, too many questions.

Posted in Blog Article | 8 Comments ?

On the Lighter Side: HAARP Tornado Vortex Clouds Attack!

May 17th, 2013

I get scattered e-mails from a lot of people, but I get routine updates from someone named "Ol'fisherman" on the sinister weather modifying effects of the HAARP facility in Alaska. The Wikipedia page describing the research facility even has a section on Conspiracy Theories.

Now, if you go to Google images and search on "lenticular clouds" you will find MANY photos similar to this one, which Ol'fisherman sent to me:

Here is the description he provided of this photo (I am not making this up):

"**These are HAARP generated Vortex Clouds. The exact type formation as seen in NORWAY HE LASER photos. The Energy here came down from Stratosphere Bounce from Earthbound HAARP Machine Array in AK. The Particle Physics as seen in Photo say's the Proton to Neutron Interaction Threshold has not been reached yet at elevations shown. But when the spiral cone gets closer to Earth's Teller Currents, and it will; the E- GAP is bridged Electrically, and the Record Tornado size and Speeds being reported, are the Result!!**"

Now let's see how long it takes for someone to post a comment that I shouldn't be poking fun, since I'm a believer in the greenhouse effect which is obviously a "conspiracy" of misguided physicists.

Posted in Blog Article | 59 Comments ?

A Simple Experiment to Show How Cool Objects Can Keep Warm Objects Warmer Still

May 16th, 2013

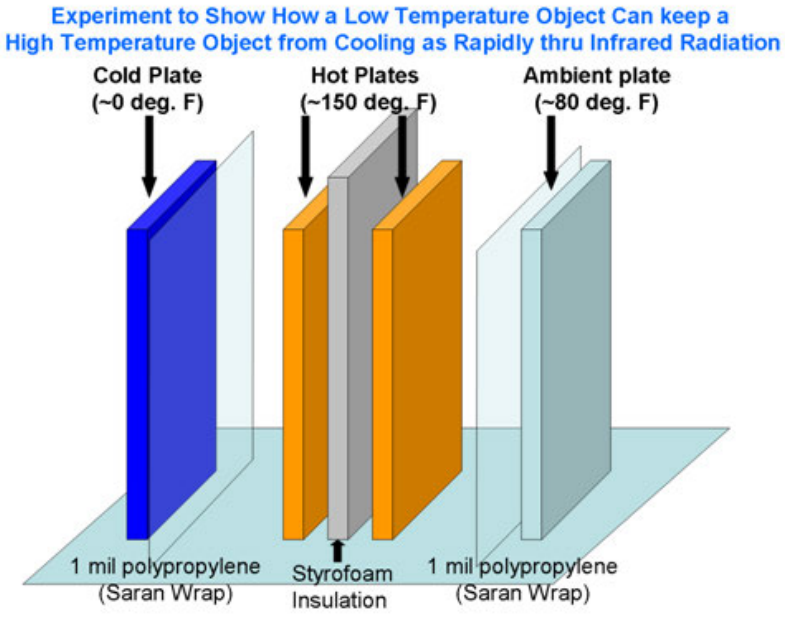
The standard explanation of the "greenhouse effect" is that it keeps the surface of the Earth warmer than it would otherwise be, through infrared radiation downwelling from the atmosphere. Even though this IR radiation is being emitted at a lower temperature than the surface, it actually keeps the surface warmer. Some people have trouble with this explanation, claiming it violates one or more laws of thermodynamics.

As I have discussed *ad nauseum*, the temperature of a heated object is always determined by rates of energy gain and energy loss, and that energy loss is almost always a function of the object's cooler surroundings.

Whether one views the greenhouse effect as extra infrared energy gained by the surface from the cooler atmosphere, or just a reduced rate of infrared energy loss by the surface to the atmosphere and outer space, the effect is the same: a surface temperature increase.

I've been toying with a few different ways to demonstrate this effect with a simple experimental setup using household items. Apparently the IR thermal imager, which I showed directly measures the surface temperature effects of varying levels of downwelling IR sky radiation on a microbolometer within the instrument, is not sufficient for some people.

So, I've come up with the following simple setup, and if I carry it out, I want predictions from readers here of what will happen to the temperatures of the 2 heated metal plates:



All metal plates coated with high emissivity (ε=0.99) Krylon flat white #1502

The two metal plates will be heated in the oven to the same temperature, then placed vertically next to each other, but separated by a sheet of Styrofoam. Obviously, the plates will cool, partly by conduction to the surrounding air. The above cartoon is just a rough approximation of the setup. I will probably have the ends of the heated plates covered by Styrofoam as well, to help reduce conductive heat loss.

But the plates also cool from infrared energy loss. So, I will expose one of the heated plates to a third plate that I will have chilled to at least 0 deg. F in the deep freeze.

Finally, I will expose the other heated plate to a 4th plate just at the ambient air temperature, say 80 deg. F.

Very thin sheets of polypropylene (Saran wrap), which are nearly transparent to IR radiation, will be used to minimize the movement of air currents between the heated plates and their cooler counterparts. All 4 plates will be coated with high emissivity (0.99) Krylon flat white #1502 paint.

My question is this: **Will the two hot plates cool at different rates?** I predict the heated plate exposed to the ambient (80 deg. F) plate will consistently stay warmer than the other heated plate exposed to the chilled (0 deg. F) plate.

Of course, if one waits long enough, all plates will come to the same temperature, since the hot plates are not actively heated (like the climate system is by the Sun) and the cold plate is not actively chilled (which would partly mimic the infrared energy sink of deep space).

The main point is that cooler objects which surround heated objects affect the heated objects temperature. As far as I can tell, this is a universal truth, with examples all around you. I find it mind boggling that some people do not accept it. (For anyone tempted to say, "But a cooler star doesn't make a hotter star hotter still", stay tuned for an experiment Anthony Watts has been working on).

I will monitor the plates' temperatures with my FLIR i7 thermal imager. Because there is still a small amount of reflection from the heated plates (0.01) the thermal imager must be pointed at an angle which will not pick up reflection from the cooler plates, which would bias the results. Another option would be to buy 2 inexpensive car thermometers with a remote display.

Again, I want to hear some predictions: **Will the hot plates cool at different rates?** If so, do you see a mechanism other than infrared energy transfer which will explain the different rates of cooling?

If you see pitfalls in the experimental setup, then feel free to point them out and suggest how to mitigate them.

UPDATE: I will be periodically checking in and deleting comments which do not directly address the above experiment and what results it will produce…unfortunately, the comments are already getting sidetracked.

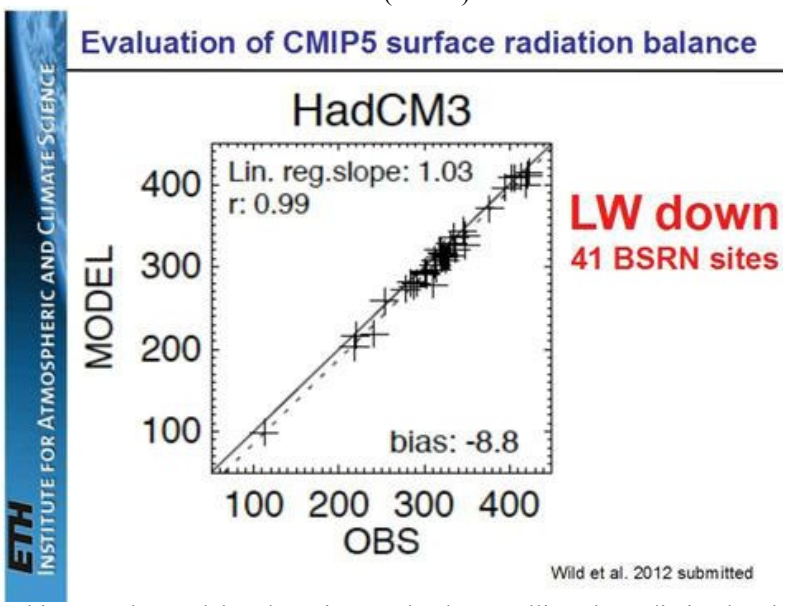
Posted in Blog Article | 524 Comments ?

Surface Radiation Budget: Where's the Proof?

May 13th, 2013

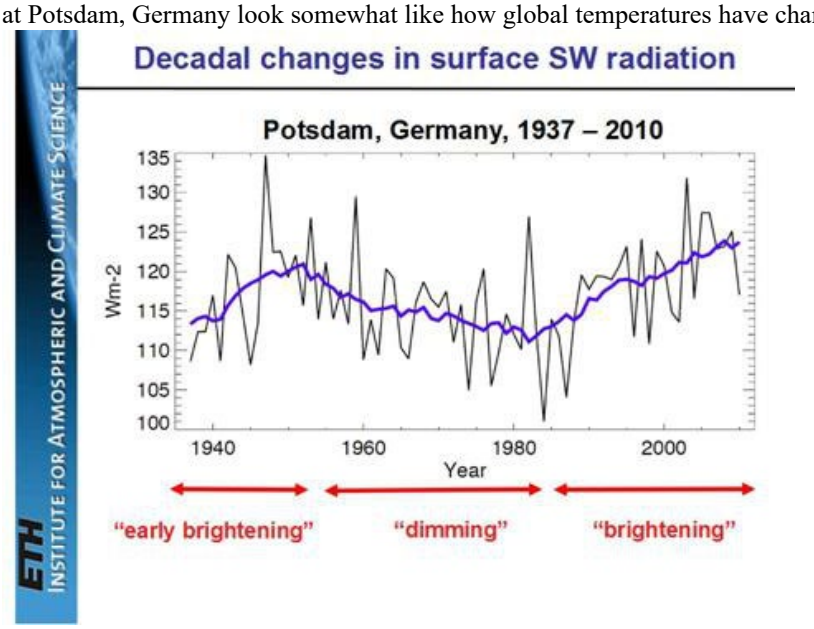
I've had several requests for evidence of the hundreds of watts of downwelling infrared sky radiation. I've mentioned that there are many surface radiation budget observation sites around the world (but few in oceanic areas for obvious reasons). I found this presentation summarizing comparisons that Martin Wild and co-investigators have made between these measurements and the latest CMIP5 climate models at the observation sites. It is quite informative, and includes their version of the Kiehl-Trenberth energy budget diagram to fit better to the surface radiative energy budget observations.

For example, here's a comparison for downward IR flux at the surface between the HadCM3 model and 41 Baseline Surface Radiation Network (BSRN) stations:



In this case, the model underestimates the downwelling sky radiation by about 9 W/m2. But for something supposedly "non-existent", there is remarkable agreement between the average model behavior and the observations for this huge (300-400 W/m2) component of the surface energy budget.

What is MOST interesting to me is the existence of multidecadal changes in sunlight (downwelling shortwave) reaching the surface, as some of the sites have such records extending back to the 1930s. For example, changes at Potsdam, Germany look somewhat like how global temperatures have changed:



The authors admit this is behavior not seen in the climate models. I suppose scientists like Trenberth or Dessler would claim these changes are positive cloud feedback in response to surface temperature changes. But the continually neglected possibility is that they have causation reversed: that natural changes in cloud cover have caused the temperature changes, and cloud feedbacks are in reality negative rather than positive.

And this is where I believe we should be spending our research time in the global warming debate. Not arguing over the existence of something ("backradiation") which is routinely measured at dozens of observation sites around the world.

Posted in Blog Article | 175 Comments ?

Time for the Slayers to Put Up or Shut Up

May 10th, 2013

I have allowed the Sky Dragon Slayers to post hundreds of comments here containing their views of how the climate system works (or maybe I should say how they think it doesn't work).

As far as I can tell, their central non-traditional view seems to be that the atmosphere does not have so-called "greenhouse gases" that emit thermal infrared radiation downward. A variation on this theme is that even if those gases exist, they emit energy at the same rate they absorb, and so have no net effect on temperature.

I have repeatedly addressed these views and why they are false.

As far as the Slayer's alternative explanations go, I have addressed why atmospheric pressure cannot explain surface temperature. The atmospheric adiabatic lapse rate describes how temperature *changes* with height for an air parcel displaced vertically, it does not tell you what the temperature, *per se*, will be.

If it was just a matter of air pressure, why is the stratosphere virtually the same temperature over its entire depth, despite spanning a factor of 100x in pressure, from about ~2 mb to ~200 mb?

For the adiabatic lapse rate to exist in the real atmosphere, there must be "convective instability", which requires BOTH lower atmospheric heating AND upper atmospheric cooling. But the upper atmosphere cannot cool unless greenhouse gases are present! Without greenhouse gases, the atmosphere would slowly approach an isothermal state through thermal conduction with a temperature close to the surface temperature, and convection would then be impossible.

In other words, without the "greenhouse effect", there would be no decrease in atmospheric temperature with height, and no convection. The existence of weather thus depends upon the greenhouse effect to destabilize the atmosphere.

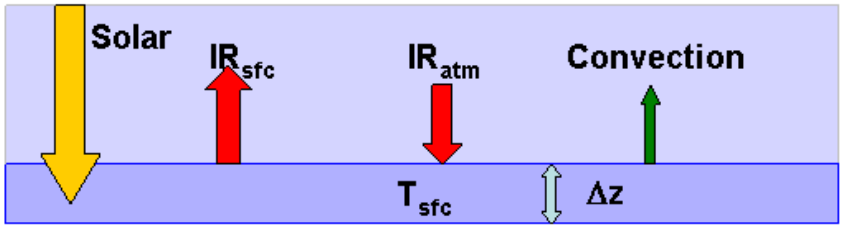
Put Up…

The Slayers have had ample opportunity to answer my challenge: take your ideas, put them into an alternative time-dependent model for surface temperature, and run it from any initial state and see if it ends up with a realistic temperature.

Determining the actual temperature at any altitude requires computing rates of energy gain and energy loss. I spent only an hour to provide a simple version of such a model based upon traditional physics, which produces the observed average surface temperature of the Earth. It is the same physics used in many weather prediction models every day, physics which if not included would cause those models forecasts to quickly diverge away from how the real atmosphere behaves on average.

Surely, of the 200 scientists and meteorologists the Slayers claim to have at their disposal, they can produce something similar.

Here's the equation I used for surface temperature change with time, and it assumes a single atmospheric layer with an average infrared effective emissivity of 0.9, based upon the Kiehl-Trenberth global average energy budget diagram.



Numerical values Based upon Kiehl & Trenberth Global average Energy budget diagram

$$\Delta z\ Cp\ [\Delta T_{sfc}/\Delta t] = Solar - IR_{sfc} + IR_{atm} - Convection$$

C_p = heat capacity of the sfc. Layer (J $m^{-3}K^{-1}$)
Δz = thickness of sfc. layer (m)
$\Delta T_{sfc}/\Delta t$ = chg. of sfc. temp.(K) with time (sec)
Solar abs. @ sfc = 161 W/m^2

IR_{sfc} = sfc. IR emission (W/m^2): σT_{sfc}^4, where σ=5.67 x 10^{-8}
IR_{atm} = atm IR emission down (W/m^2) : $\varepsilon_{atm}\sigma T_{atm}^4$, T_{atm}=283 K @ ε_{atm}=0.9
Convection = convective heat loss, 97 W/m^2

I also have a version of the model which adds the time rate of change of the bulk atmospheric temperature, too, based upon the Kiehl-Trenberth diagram. These are very simple models…usually in modeling the atmosphere and ocean are divided up into many mutually interacting layers, but I'm trying to keep it simple here.

…or Shut Up

The Slayers have ample opportunity to post comments here outlining their views, often dominating the bandwidth, and those comments will remain for posterity.

But my blog is no longer going to provide them a platform for their unsupported pseudo-scientific claims… they can post their cult science on their own blog. They have taken far too much of my time, which would be better spent thinking about the more obvious shortcomings of global warming theory.

If and when they answer my challenge to provide a quantitative model of surface temperature change, I might change my mind. But they must first provide a time-dependent model like that above which involves energy gain and energy loss terms, which is the only way to compute the temperature of something from theory. Those energy gain and loss terms must be consistent with experimental observations, and (of course) the physical units of the terms must all be consistent.

But I don't see how they can ever do that, because they will ignore the hundreds of watts of downward emitted IR radiation from the sky, an energy flux which is routinely observed with a variety of instrumentation, and explained with well-established theories of radiative transfer and laboratory evidence of the infrared absorption characteristics of various gases.

If anyone challenges me to provide justification for anything I've stated above, well, I assume you know how to use Google. There is abundant information out there…go educate yourself.

Posted in Blog Article | 606 Comments ?

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The [redacted] accepts no responsibility for changes mad[redacted]ments after transmission from the office.

From: [redacted]
To: [redacted]
Subject: FW: Climate ModelsBetter updated versions on Roy Spencers blog http://www.drroyspencer.com/
Date: Friday, 14 June 2013 2:49:57 PM
Attachments: image001.png

[redacted]

Here is a copy of what I originally sent to [redacted]

[redacted]

From: [redacted] <[redacted]niwa.co.nz>
Date: Wednesday, 12 June 2013 10:23 PM
To: [redacted] <[redacted]>
Subject: Re: Climate ModelsBetter updated versions on Roy Spencers blog
http://www.drroyspencer.com/

Hi [redacted]

Spencer is well known for his sceptical views on climate change – e.g. see the entry on him in Wikipedia http://en.wikipedia.org/wiki/Roy_Spencer_(scientist).

According to the Wikipedia article: "Spencer is a signatory to An Evangelical Declaration on Global Warming,[24][25] which states that "Earth and its ecosystems – created by God's intelligent design and infinite power and sustained by His faithful providence – are robust, resilient, self-regulating, and self-correcting".[26] He believes that most climate change is natural in origin, the result of long-term changes in the Earth's albedo and that anthropogenic greenhouse gas emissions have caused some warming, but that its warming influence is small compared to natural, internal, chaotic fluctuations in global average cloud cover."

Spenser has a substantial journal publication record. He was a co-author of the original paper (Spencer and Christy, Science, 1990) which estimated tropospheric temperatures from satellite observations - the so-called MSU time series.. The original "Spencer and Christy" time series indicated little trend in temperature and was the basis of arguments put forward by many skeptics up to a decade or so ago that arguments on the basis of surface (Thermometer) temperature measurements that the earth was warming were flawed.

However subsequent work by several groups showed that there were various confounding effects in the satellite–based temperature series (which was developed from a number of different satelllites) and when these were accounted for the apparent discrepancies between global temperature trends estimated from surface thermometer measurements and from satellite temperatures largely disappeared
(e.g. Thorne et al: Surface Temperature trends – history of an ongoing controversy. WIRES Climate Change Vol 2 Jan/Feb 2011, pp 66 – 88. http://onlinelibrary.wiley.com/doi/10.1002/wcc.80/full).

Spencer's blog reference which you provided (http://www.drroyspencer.com/) compares temperature estimates in the tropical mid-troposphere (20°S-20°N) from various radiosonde balloon and satellite measurements from 1977 – 2010, with climate model simulations for the same period, and claims there is substantial disagreement between the measurements and the models. However: The paper

by Thorne I've referred to above states that the IPCC 2007 assessment "concluded that there was no evidence for a discrepancy between surface and tropospheric temperature trends globally but that ambiguity remained in the tropics. The presence of substantial observational uncertainty in the tropics was posited as the most likely explanation". Thorne et al then describe further work since IPCC 2007 regarding the tropical troposphere and state that "A claim by Douglass et al.190 that trends in tropical temperatures derived from models were substantially inconsistent with those from observations was refuted by Santer et al.191 using newer observational datasets and correcting several methodological flaws."

So in my view the Spencer blog article does not take into account the published literature on measurement-based estimates of temperature trends in the tropical troposphere and on comparison of these with climate model simulations. I place much more weight on the published peer-reviwed literature on this matter than on this unrefereed blog article.

Hope this helps. Apologies for the length, but I thought providing some references and some discussion of the history might be useful to you.

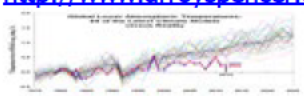
Regards - [redacted]

From: [redacted] <[redacted]>
Date: Wednesday, 12 June 2013 4:50 PM
To: [redacted] <[redacted]niwa.co.nz>
Subject: FW: Climate ModelsBetter updated versions on Roy Spencers blog
http://www.drroyspencer.com/

WHAT SKEPTIC IS THIS [redacted] CHEERS [redacted]

[redacted]

Subject: Climate ModelsBetter updated versions on Roy Spencers blog
http://www.drroyspencer.com/



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may be unlawful. If you have received this message by mistake please call the
sender immediately on [redacted] or notify us by return email and erase the
original message and attachments. Thank you.

The [redacted] accepts no responsibility for chan
made to this email or to any attachments after transmission from the office.

From: [redacted]
To: [redacted]
Subject: FW: Emailing: Roy Spencer, PhD
Date: Friday, 14 June 2013 2:48:45 PM
Attachments: image009.png

[redacted]

For your information, in case [redacted] tries to push this any further. I'll also send you a copy of the answer I sent to the original question from [redacted] of [redacted] – an answer which I worded carefully even though I didn't at that stage know who had approached [redacted] about the Spenser blog article.

Regards - [redacted]

From: [redacted] <[redacted]niwa.co.nz>
Date: Friday, 14 June 2013 2:35 PM
To: [redacted] <[redacted]>
Subject: Re: Emailing: Roy Spencer, PhD

Hi [redacted]

Thanks for the info in your latest email message. By the way I did not attack Spencers' religious beliefs. You asked me who he was, I included some material from Wikipedia about his views. I made no value judgements about these. If Wikipedia had been wrong I assume Spencer or others would have approached them seeking a correction. I also made the point that Spenser has a substantial journal publication record.

Regarding [redacted] comments below about data: The point I made was that the published literature indicates there is substantial observational uncertainty in the tropics. That is relevant to the interpretation of the graphic from Spencer's web page – as is the other point I made which is that other researchers have published significantly different conclusions from Spencer's, in published papers in peer-reviewed journals rather than in unrefereed web blogs.

Regards - [redacted]

From: [redacted] <[redacted]>
Date: Friday, 14 June 2013 1:37 PM
To: [redacted] <[redacted]niwa.co.nz>
Subject: FW: Emailing: Roy Spencer, PhD

Fyi this is what others think in NZ cheers [redacted]

[redacted]

From: [redacted] [mailto[redacted]@xtra.co.nz]
Sent: Friday, 14 June 2013 11:49 a.m.
To: [redacted]
Subject: Emailing: Roy Spencer, PhD

[redacted] **&** [redacted]

Roy Spencer is a respected climatologist. The information that he presents below are assessments of the climate models (no less than 73 of them) which are those run by most of the major research groups in the world, and as used by the IPCC.

It is an insult that [redacted] attacks Spencer's religious beliefs (putative

beliefs), and comes up with little to refute the actual data on warming. When in doubt look at the data.

[redacted] **it is also an unfortunate comment that you have made "don't believe everything you read on the web" Which one of the models, or which data do you believe we shouldn't believe? The IPCC in their draft AR5 report had a similar figure. I will look it out and send it to you.**

The same story is told!!

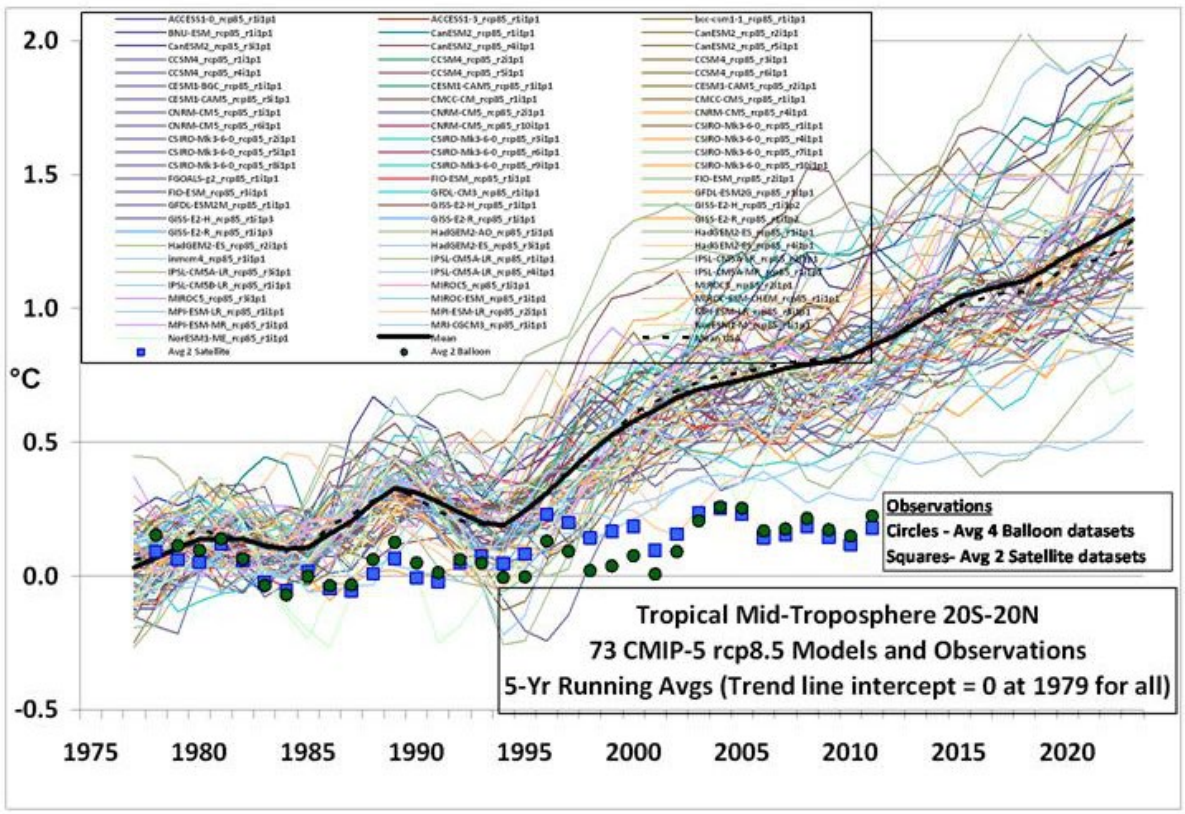
Cheers,

[redacted]

STILL Epic Fail: 73 Climate Models vs. Measurements, Running 5-Year Means

June 6th, 2013

In response to those who complained in my recent post that linear trends are not a good way to compare the models to observations (even though the modelers have claimed that it's the long-term behavior of the models we should focus on, not individual years), here are running 5-year averages for the tropical tropospheric temperature, models versus observations (click for full size):



In this case, the models and observations have been plotted so that their respective 1979-2012 trend lines all intersect in 1979, which we believe is the most meaningful way to simultaneously plot the models' results for comparison to the observations.

In my opinion, the day of reckoning has arrived. The modellers and the IPCC have willingly ignored the

evidence for low climate sensitivity for many years, despite the fact that some of us have shown that simply confusing cause and effect when examining cloud and temperature variations can totally mislead you on cloud feedbacks (e.g. Spencer & Braswell, 2010). The discrepancy between models and observations is not a new issue…just one that is becoming more glaring over time.

It will be interesting to see how all of this plays out in the coming years. I frankly don't see how the IPCC can keep claiming that the models are "not inconsistent with" the observations. Any sane person can see otherwise.

If the observations in the above graph were on the UPPER (warm) side of the models, do you really believe the modelers would not be falling all over themselves to see how much additional surface warming they could get their models to produce?

Hundreds of millions of dollars that have gone into the expensive climate modelling enterprise has all but destroyed governmental funding of research into natural sources of climate change. For years the modelers have maintained that there is no such thing as natural climate change…yet they now, ironically, have to invoke natural climate forces to explain why surface warming has essentially stopped in the last 15 years!

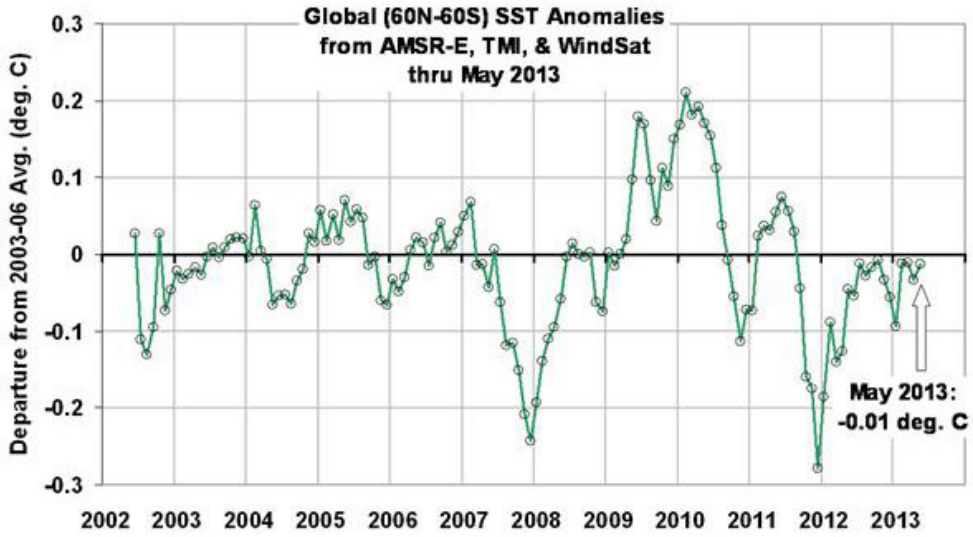
Forgive me if I sound frustrated, but we scientists who still believe that climate change can also be naturally forced have been virtually cut out of funding and publication by the 'humans-cause-everything-bad-that-happens' juggernaut. The public who funds their work will not stand for their willful blindness much longer.

Posted in Blog Article | 213 Comments ?

Global Microwave SST Update for May 2013: -0.01 deg. C

June 5th, 2013

The satellite-based microwave global average sea surface temperature (SST) update for May 2013 is -0.01 deg. C, relative to the 2003-2006 average (click for large version):



The anomalies are computed relative to only 2003-2006 because those years were relatively free of El Nino and La Nina activity, which if included would cause temperature anomaly artifacts in other years. Thus, these anomalies cannot be directly compared to, say, the Reynolds anomalies which extend back to the early 1980s. Nevertheless, they should be useful for monitoring signs of recent ocean surface warming, which appears to have stalled since at least the early 2000's. (For those who also track our lower tropospheric temperature ["LT"] anomalies, these SST anomalies average about 0.20 deg. C cooler than LT since mid-2002, but there is considerable variability in that number).

The SST retrievals come from Remote Sensing Systems (RSS), and are based upon passive microwave observations of the ocean surface from AMSR-E on NASA's Aqua satellite, the TRMM satellite Microwave Imager (TMI), and WindSat. While TMI has operated continuously through the time period (but only over the tropics and subtropics), AMSR-E stopped nominal operation in October 2011, after which Remote Sensing Systems patched in SST data from WindSat. These various satellite SST datasets have been carefully intercalibrated by RSS.

Despite the relatively short period of record, I consider this dataset to be the most accurate depiction of SST variability over the last 10+ years due to these instruments' relative insensitivity to contamination by clouds

and aerosols at 6.9 GHz and 10.7 GHz.

Posted in Blog Article | 18 Comments ?

FLASH! Global warming causes record-wide tornadoes!

June 4th, 2013

Just thought I'd try to be the first the make the connection between the record wide (2.6 miles) EF5 tornado near Oklahoma City last Friday and Global Warming. (Click the above photo for the full story).

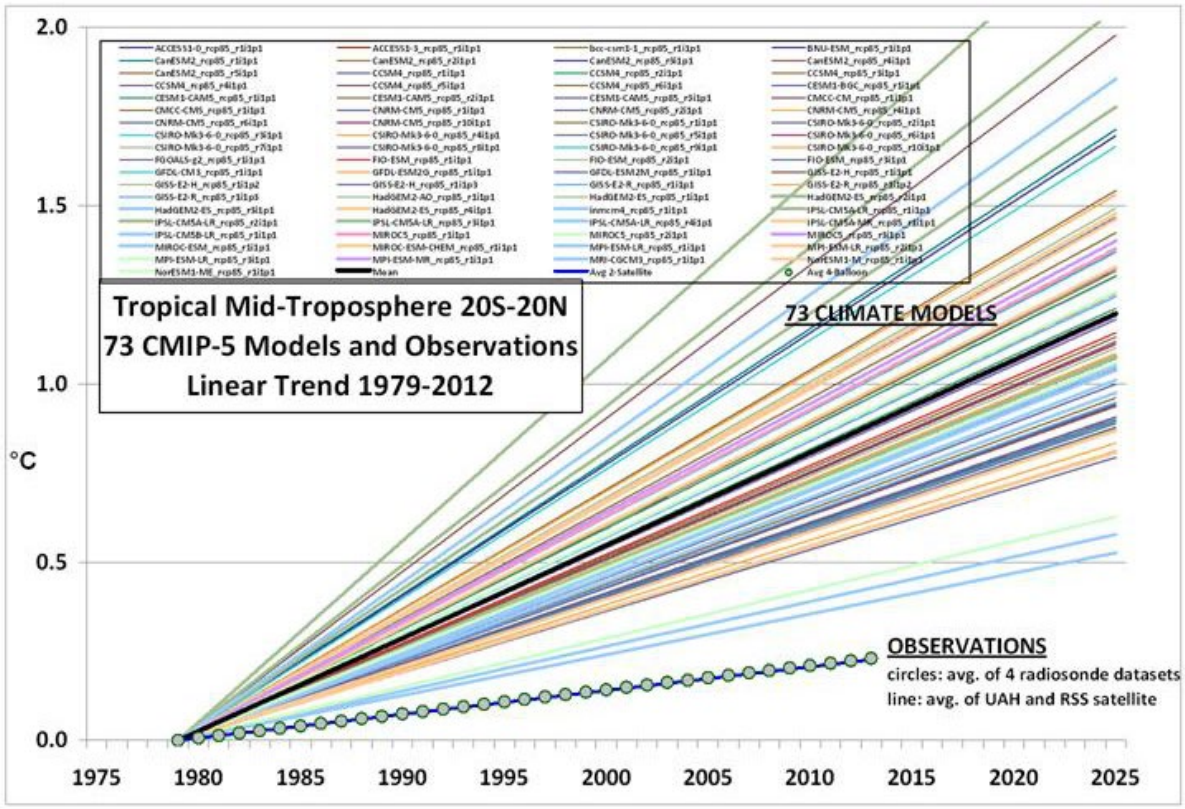
Of course, as I have discussed before, the missing ingredient in tornadoes is usually a cool air mass nearby. If warm humid air was the missing ingredient, the tropics would be filled with tornadic thunderstorms…which is not the case.

Posted in Blog Article | 9 Comments ?

EPIC FAIL: 73 Climate Models vs. Observations for Tropical Tropospheric Temperature

June 4th, 2013

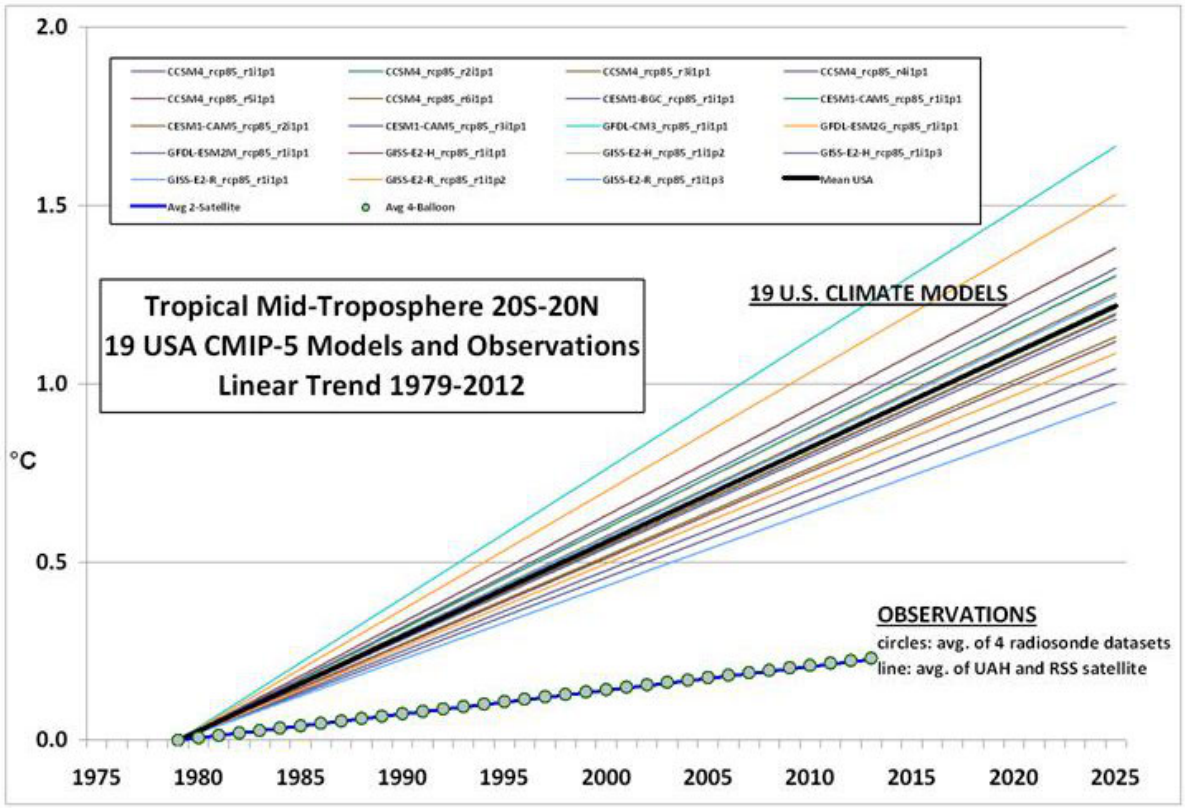
Courtesy of John Christy, a comparison between 73 CMIP5 models (archived at the KNMI Climate Explorer website) and observations for the tropical bulk tropospheric temperature (aka "MT") since 1979 (click for large version):



Rather than a spaghetti plot of the models' individual years, we just plotted the linear temperature trend from each model and the observations for the period 1979-2012.

Note that the observations (which coincidentally give virtually identical trends) come from two very different observational systems: 4 radiosonde datasets, and 2 satellite datasets (UAH and RSS).

If we restrict the comparison to the 19 models produced by only U.S. research centers, the models are more tightly clustered:



Now, in what universe do the above results not represent an epic failure for the models?

I continue to suspect that the main source of disagreement is that the models' positive feedbacks are too strong…and possibly of even the wrong sign.

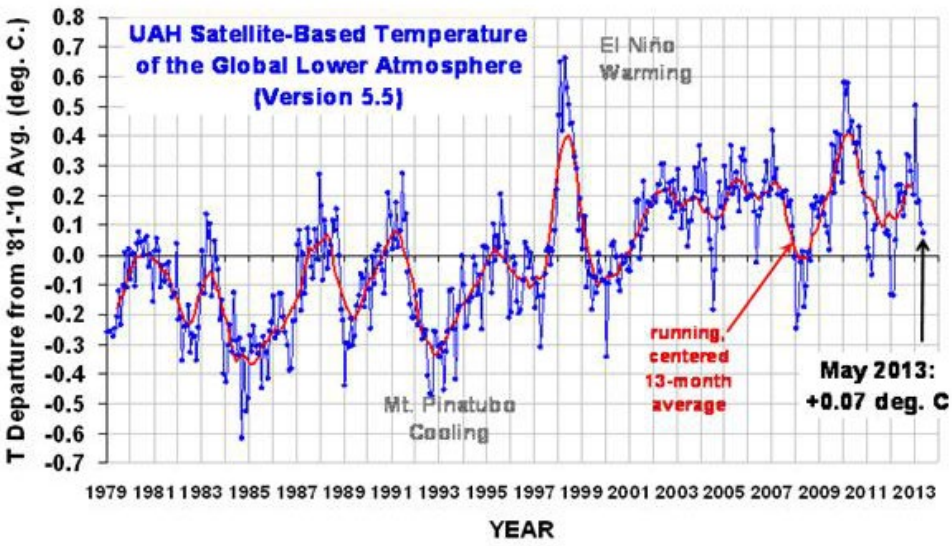
The lack of a tropical upper tropospheric hotspot in the observations is the main reason for the disconnect in the above plots, and as I have been pointing out this is probably rooted in differences in water vapor feedback. The models exhibit strongly positive water vapor feedback, which ends up causing a strong upper tropospheric warming response (the "hot spot"), while the observation's lack of a hot spot would be consistent with little water vapor feedback.

Posted in Blog Article | 125 Comments ?

UAH Global Temperature Update for May 2013: +0.07 deg. C

June 4th, 2013

Our Version 5.5 global average lower tropospheric temperature (LT) anomaly for May, 2013 is +0.07 deg. C, down a little from +0.10 deg. C in April (click for large version):



The global, hemispheric, and tropical LT anomalies from the 30-year (1981-2010) average for the last 17 months are:

YR MON GLOBAL NH SH TROPICS
2012 1 -0.134 -0.065 -0.203 -0.256
2012 2 -0.135 +0.018 -0.289 -0.320
2012 3 +0.051 +0.119 -0.017 -0.238
2012 4 +0.232 +0.351 +0.114 -0.242
2012 5 +0.179 +0.337 +0.021 -0.098
2012 6 +0.235 +0.370 +0.101 -0.019
2012 7 +0.130 +0.256 +0.003 +0.142
2012 8 +0.208 +0.214 +0.202 +0.062
2012 9 +0.339 +0.350 +0.327 +0.153
2012 10 +0.333 +0.306 +0.361 +0.109
2012 11 +0.282 +0.299 +0.265 +0.172
2012 12 +0.206 +0.148 +0.264 +0.138
2013 1 +0.504 +0.555 +0.453 +0.371
2013 2 +0.175 +0.368 -0.018 +0.168
2013 3 +0.183 +0.329 +0.038 +0.226
2013 4 +0.103 +0.120 +0.086 +0.167
2013 5 +0.074 +0.162 -0.013 +0.113

Posted in Blog Article | 17 Comments ?

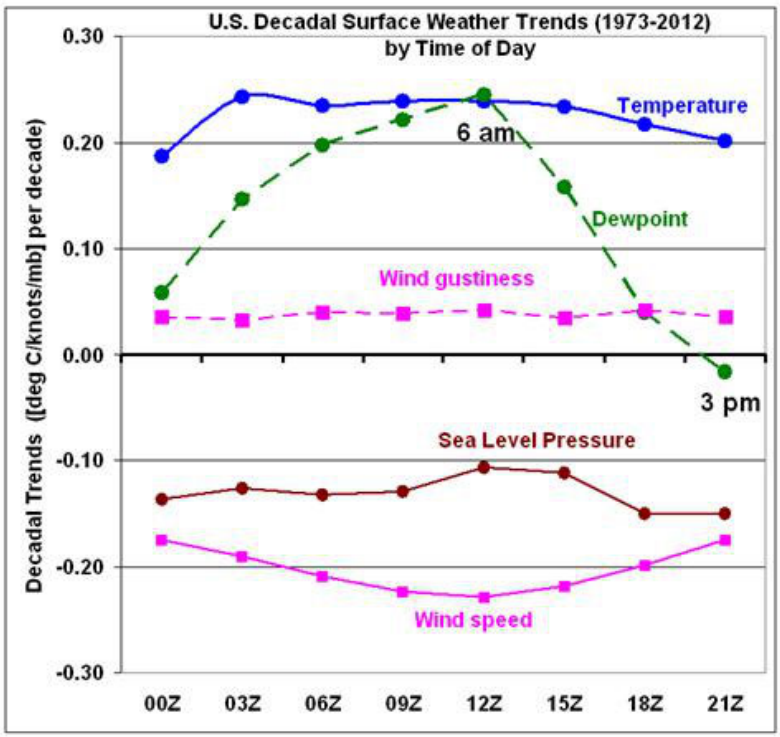
Diurnal Trends in Dewpoint Averaged over the U.S. Since 1973

June 4th, 2013

The Integrated Surface Hourly (ISH) weather data I have described before allows one to examine how various surface weather elements have changed as a function of time of day. (The ISH data volume is very large and it is not a trivial task to decode and analyze many years of it.) Three-hourly synoptic weather observations have been made at many U.S. weather stations for at least 40 years: 1973 seems to be the year when the number of stations reached a fairly large number, and so that is the year my analyses begin with.

I have previously mentioned that ISH surface data shows U.S. warming since 1973 (primarily a winter phenomenon, due to unusually cold winters in the 1970s), and a curious decrease in surface wind speed.

Here I'd like to point out another curiosity: while the dewpoint temperature has increased in step with air temperature at 12Z (around 6 a m.), it has increased much less so at other times of the day, and even decreased slightly at 21Z (around 3 p m.), during the period 1973-2012:



Assuming that dewpoint sensor design changes over the years have not introduced a diurnally varying measurement bias, a natural question arises: what would cause afternoon dewpoints to not rise in the face of warming both day and night? (Note I have not made any adjustments for sensor changes, siting changes, or urbanization in the above plot).

The first explanation that comes to my mind is a change in daytime convective mixing of the troposphere. If there is a slight increase in the depth of convective mixing, then drier (lower dewpoint) air aloft will be mixed down toward the surface. Such a change would probably also be associated with deeper moist convection and probably an increase in heavy rain rates, evidence for which has been claimed elsewhere (e.g. here). The implication of such a change for climate feedbacks is complicated and not obvious.

A second possibility is a long-term decrease in middle and upper tropospheric humidity, and no increase in convective mixing. In this case, daytime mixing would bring down the lower humidity air to the surface from the same altitude as before. There is some radiosonde evidence for such a decrease in absolute humidities above the turbulent boundary layer (e.g. Paltridge, 2009). If real, such a decrease might well result in negative water vapor feedback, since a small decrease in mid- and upper tropospheric humidity can have a natural radiative cooling effect which outweighs the warming from a larger increase in lower tropospheric humidity (e.g. Spencer and Braswell, 1997; Miskolczi, 2010). Of course, all climate models exhibit strongly positive water vapor feedback, approximately doubling the direct warming effect of increasing CO2 alone.

I don't have a strong opinion on which of these possibilities (sensor problems, deeper convection, or a dryer mid- and upper troposphere) is more likely. Too little information, too many questions.

Posted in Blog Article | 8 Comments ?

On the Lighter Side: HAARP Tornado Vortex Clouds Attack!

May 17th, 2013

I get scattered e-mails from a lot of people, but I get routine updates from someone named "Ol'fisherman" on the sinister weather modifying effects of the HAARP facility in Alaska. The Wikipedia page describing the research facility even has a section on Conspiracy Theories.

Now, if you go to Google images and search on "lenticular clouds" you will find MANY photos similar to this one, which Ol'fisherman sent to me:

Here is the description he provided of this photo (I am not making this up):

"**These are HAARP generated Vortex Clouds. The exact type formation as seen in NORWAY HE LASER photos. The Energy here came down from Stratosphere Bounce from Earthbound HAARP Machine Array in AK. The Particle Physics as seen in Photo say's the Proton to Neutron Interaction Threshold has not been reached yet at elevations shown. But when the spiral cone gets closer to Earth's Teller Currents, and it will; the E- GAP is bridged Electrically, and the Record Tornado size and Speeds being reported, are the Result!!**"

Now let's see how long it takes for someone to post a comment that I shouldn't be poking fun, since I'm a believer in the greenhouse effect which is obviously a "conspiracy" of misguided physicists.

Posted in Blog Article | 59 Comments ?

A Simple Experiment to Show How Cool Objects Can Keep Warm Objects Warmer Still

May 16th, 2013

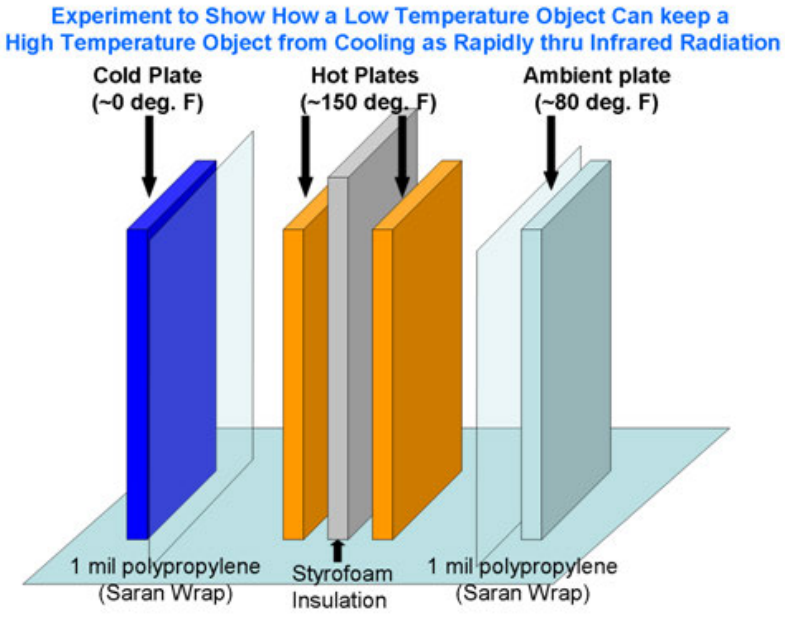
The standard explanation of the "greenhouse effect" is that it keeps the surface of the Earth warmer than it would otherwise be, through infrared radiation downwelling from the atmosphere. Even though this IR radiation is being emitted at a lower temperature than the surface, it actually keeps the surface warmer. Some people have trouble with this explanation, claiming it violates one or more laws of thermodynamics.

As I have discussed *ad nauseum*, the temperature of a heated object is always determined by rates of energy gain and energy loss, and that energy loss is almost always a function of the object's cooler surroundings.

Whether one views the greenhouse effect as extra infrared energy gained by the surface from the cooler atmosphere, or just a reduced rate of infrared energy loss by the surface to the atmosphere and outer space, the effect is the same: a surface temperature increase.

I've been toying with a few different ways to demonstrate this effect with a simple experimental setup using household items. Apparently the IR thermal imager, which I showed directly measures the surface temperature effects of varying levels of downwelling IR sky radiation on a microbolometer within the instrument, is not sufficient for some people.

So, I've come up with the following simple setup, and if I carry it out, I want predictions from readers here of what will happen to the temperatures of the 2 heated metal plates:



All metal plates coated with high emissivity (ε=0.99) Krylon flat white #1502

The two metal plates will be heated in the oven to the same temperature, then placed vertically next to each other, but separated by a sheet of Styrofoam. Obviously, the plates will cool, partly by conduction to the surrounding air. The above cartoon is just a rough approximation of the setup. I will probably have the ends of the heated plates covered by Styrofoam as well, to help reduce conductive heat loss.

But the plates also cool from infrared energy loss. So, I will expose one of the heated plates to a third plate that I will have chilled to at least 0 deg. F in the deep freeze.

Finally, I will expose the other heated plate to a 4th plate just at the ambient air temperature, say 80 deg. F.

Very thin sheets of polypropylene (Saran wrap), which are nearly transparent to IR radiation, will be used to minimize the movement of air currents between the heated plates and their cooler counterparts. All 4 plates will be coated with high emissivity (0.99) Krylon flat white #1502 paint.

My question is this: **Will the two hot plates cool at different rates?** I predict the heated plate exposed to the ambient (80 deg. F) plate will consistently stay warmer than the other heated plate exposed to the chilled (0 deg. F) plate.

Of course, if one waits long enough, all plates will come to the same temperature, since the hot plates are not actively heated (like the climate system is by the Sun) and the cold plate is not actively chilled (which would partly mimic the infrared energy sink of deep space).

The main point is that cooler objects which surround heated objects affect the heated objects temperature. As far as I can tell, this is a universal truth, with examples all around you. I find it mind boggling that some people do not accept it. (For anyone tempted to say, "But a cooler star doesn't make a hotter star hotter still", stay tuned for an experiment Anthony Watts has been working on).

I will monitor the plates' temperatures with my FLIR i7 thermal imager. Because there is still a small amount of reflection from the heated plates (0.01) the thermal imager must be pointed at an angle which will not pick up reflection from the cooler plates, which would bias the results. Another option would be to buy 2 inexpensive car thermometers with a remote display.

Again, I want to hear some predictions: **Will the hot plates cool at different rates?** If so, do you see a mechanism other than infrared energy transfer which will explain the different rates of cooling?

If you see pitfalls in the experimental setup, then feel free to point them out and suggest how to mitigate them.

UPDATE: I will be periodically checking in and deleting comments which do not directly address the above experiment and what results it will produce…unfortunately, the comments are already getting sidetracked.

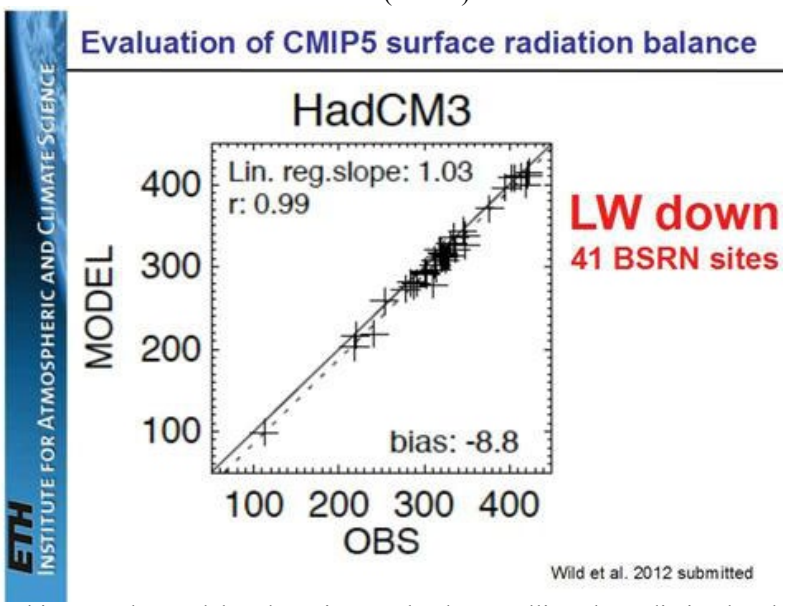
Posted in Blog Article | 524 Comments ?

Surface Radiation Budget: Where's the Proof?

May 13th, 2013

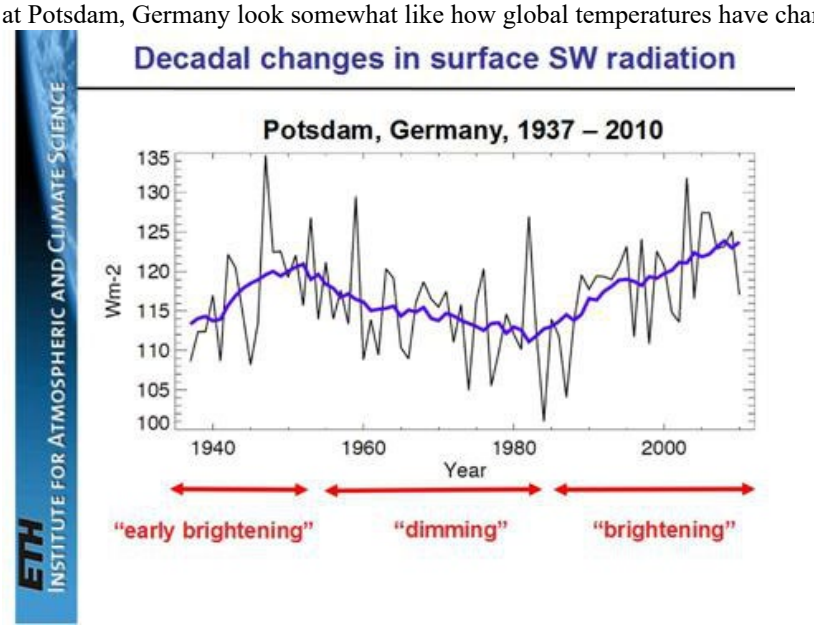
I've had several requests for evidence of the hundreds of watts of downwelling infrared sky radiation. I've mentioned that there are many surface radiation budget observation sites around the world (but few in oceanic areas for obvious reasons). I found this presentation summarizing comparisons that Martin Wild and co-investigators have made between these measurements and the latest CMIP5 climate models at the observation sites. It is quite informative, and includes their version of the Kiehl-Trenberth energy budget diagram to fit better to the surface radiative energy budget observations.

For example, here's a comparison for downward IR flux at the surface between the HadCM3 model and 41 Baseline Surface Radiation Network (BSRN) stations:



In this case, the model underestimates the downwelling sky radiation by about 9 W/m2. But for something supposedly "non-existent", there is remarkable agreement between the average model behavior and the observations for this huge (300-400 W/m2) component of the surface energy budget.

What is MOST interesting to me is the existence of multidecadal changes in sunlight (downwelling shortwave) reaching the surface, as some of the sites have such records extending back to the 1930s. For example, changes at Potsdam, Germany look somewhat like how global temperatures have changed:



The authors admit this is behavior not seen in the climate models. I suppose scientists like Trenberth or Dessler would claim these changes are positive cloud feedback in response to surface temperature changes. But the continually neglected possibility is that they have causation reversed: that natural changes in cloud cover have caused the temperature changes, and cloud feedbacks are in reality negative rather than positive.

And this is where I believe we should be spending our research time in the global warming debate. Not arguing over the existence of something ("backradiation") which is routinely measured at dozens of observation sites around the world.

Posted in Blog Article | 175 Comments ?

Time for the Slayers to Put Up or Shut Up

May 10th, 2013

I have allowed the Sky Dragon Slayers to post hundreds of comments here containing their views of how the climate system works (or maybe I should say how they think it doesn't work).

As far as I can tell, their central non-traditional view seems to be that the atmosphere does not have so-called "greenhouse gases" that emit thermal infrared radiation downward. A variation on this theme is that even if those gases exist, they emit energy at the same rate they absorb, and so have no net effect on temperature.

I have repeatedly addressed these views and why they are false.

As far as the Slayer's alternative explanations go, I have addressed why atmospheric pressure cannot explain surface temperature. The atmospheric adiabatic lapse rate describes how temperature *changes* with height for an air parcel displaced vertically, it does not tell you what the temperature, *per se*, will be.

If it was just a matter of air pressure, why is the stratosphere virtually the same temperature over its entire depth, despite spanning a factor of 100x in pressure, from about ~2 mb to ~200 mb?

For the adiabatic lapse rate to exist in the real atmosphere, there must be "convective instability", which requires BOTH lower atmospheric heating AND upper atmospheric cooling. But the upper atmosphere cannot cool unless greenhouse gases are present! Without greenhouse gases, the atmosphere would slowly approach an isothermal state through thermal conduction with a temperature close to the surface temperature, and convection would then be impossible.

In other words, without the "greenhouse effect", there would be no decrease in atmospheric temperature with height, and no convection. The existence of weather thus depends upon the greenhouse effect to destabilize the atmosphere.

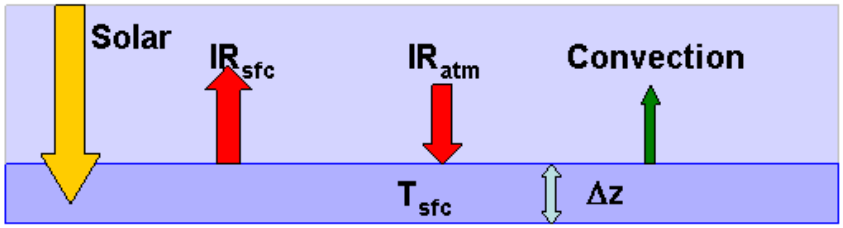
Put Up…

The Slayers have had ample opportunity to answer my challenge: take your ideas, put them into an alternative time-dependent model for surface temperature, and run it from any initial state and see if it ends up with a realistic temperature.

Determining the actual temperature at any altitude requires computing rates of energy gain and energy loss. I spent only an hour to provide a simple version of such a model based upon traditional physics, which produces the observed average surface temperature of the Earth. It is the same physics used in many weather prediction models every day, physics which if not included would cause those models forecasts to quickly diverge away from how the real atmosphere behaves on average.

Surely, of the 200 scientists and meteorologists the Slayers claim to have at their disposal, they can produce something similar.

Here's the equation I used for surface temperature change with time, and it assumes a single atmospheric layer with an average infrared effective emissivity of 0.9, based upon the Kiehl-Trenberth global average energy budget diagram.



Numerical values Based upon Kiehl & Trenberth Global average Energy budget diagram

$$\Delta z\ Cp\ [\Delta T_{sfc}/\Delta t] = Solar - IR_{sfc} + IR_{atm} - Convection$$

C_p = heat capacity of the sfc. Layer (J $m^{-3}K^{-1}$)
Δz = thickness of sfc. layer (m)
$\Delta T_{sfc}/\Delta t$ = chg. of sfc. temp.(K) with time (sec)
Solar abs. @ sfc = 161 W/m^2

IR_{sfc} = sfc. IR emission (W/m^2): σT_{sfc}^4, where σ=5.67 x 10^{-8}
IR_{atm} = atm IR emission down (W/m^2) : $\varepsilon_{atm}\sigma T_{atm}^4$, T_{atm}=283 K @ ε_{atm}=0.9
Convection = convective heat loss, 97 W/m^2

I also have a version of the model which adds the time rate of change of the bulk atmospheric temperature, too, based upon the Kiehl-Trenberth diagram. These are very simple models…usually in modeling the atmosphere and ocean are divided up into many mutually interacting layers, but I'm trying to keep it simple here.

…or Shut Up

The Slayers have ample opportunity to post comments here outlining their views, often dominating the bandwidth, and those comments will remain for posterity.

But my blog is no longer going to provide them a platform for their unsupported pseudo-scientific claims… they can post their cult science on their own blog. They have taken far too much of my time, which would be better spent thinking about the more obvious shortcomings of global warming theory.

If and when they answer my challenge to provide a quantitative model of surface temperature change, I might change my mind. But they must first provide a time-dependent model like that above which involves energy gain and energy loss terms, which is the only way to compute the temperature of something from theory. Those energy gain and loss terms must be consistent with experimental observations, and (of course) the physical units of the terms must all be consistent.

But I don't see how they can ever do that, because they will ignore the hundreds of watts of downward emitted IR radiation from the sky, an energy flux which is routinely observed with a variety of instrumentation, and explained with well-established theories of radiative transfer and laboratory evidence of the infrared absorption characteristics of various gases.

If anyone challenges me to provide justification for anything I've stated above, well, I assume you know how to use Google. There is abundant information out there…go educate yourself.

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From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: Aqua satellite data
Date: Thursday, 17 April 2008 6:51:38 AM
Attachments: Spenceretal2007GRL.pdf

Hi [redacted]

I've attached the GRL paper published by Spencer et al late last year. They look at ISO variability and see changes in high cloud that nominally support Lindzen's "iris hypothesis". But they point out that behaviour on the scale of weeks doesn't necessarily translate to climate time scales. Hartmann published a paper arguing against the "iris" back in 2002 - Wikipedia has a brief but useful little summary:

http://en.wikipedia.org/wiki/Iris_hypothesis

The NASA Earth Observatory site has a rather longer version of events:

http://earthobservatory.nasa.gov/Study/Iris/

As with a lot of these issues, I would say there is a lot to understand yet. Dynamical (circulation) mechanisms may be more important that cloud physics in this instance. I would support the view that the AR4 summary is the best state of the art in terms of our understanding. Spencer's paper hardly overturns all our previous understanding...

Cheers,
[redacted]

[redacted]

>>> [redacted] <[redacted]niwa.co.nz> 04/17/08 4:28 AM >>>
Hi [redacted]

All I've seen on this so far is the sceptical article by Owen McShane in last week's NBR which one of my NIWA colleagues emailed to me. Because I'm currently travelling overseas I've not had a chance to follow up on the work by Spencer which he refers to. However I am aware of the arguments put forward by Monckton about the Stefan-Boltzman equation which McShane refers to - and they are incorrect.

Regarding your question about the Aqua data: Given all the evidence assessed in the IPCC's Fourth Assessment Report I'm pretty confident in saying the answer to your question is "no".

Regards - [redacted]

PS (To [redacted] Have you seen anything about the "Spencer mechanism" referred to by McShane in the April 4 NBR?

>Hi [redacted]

>Are the NASA Aqua satellite data seriously challenging the
>scientific consensus on the rate & direction of climate change?
>[redacted]
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