

From: Kevin Trenberth <trenbert@cgd.ucar.edu>  
 To: tom crowley <tcrowley@duke.edu>  
 Subject: Re: REQUEST FOR INFORMATION ON CLIMATE CHANGE AND HUMAN ATTRIBUTIONS  
 Date: Fri, 12 Mar 2004 11:22:56 -0700  
 Cc: Chick Keller <cfk@lanl.gov>, Richard Somerville <rsomerville@ucsd.edu>, Tom Wigley <wigley@cgd.ucar.edu>, "Howard Hanson, LDRD" <hph@lanl.gov>, "James E. Hansen" <jhansen@giss.nasa.gov>, Michael Schlesinger <schlesin@atmos.uiuc.edu>, Phil Jones <p.jones@uea.ac.uk>, Thomas R Karl <Thomas.R.Karl@noaa.gov>, Mike MacCracken <maccrac@comcast.net>, Ben Santer <santer1@llnl.gov>, thompson.4@osu.edu, rbradley@geo.umass.edu, mhughes@ltrr.arizona.edu, Keith Briffa <k.briffa@uea.ac.uk>, Tim Osborn <t.osborn@uea.ac.uk>

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I agree with Tom: I sent you (without copying others) a whole host of material..  
 Kevin

tom crowley wrote:

> For goodness sakes, I don't know where to start - let me just make one  
 > point with respect to solar - solar projects onto the GHG signal in  
 > the 20th c. so solar cannot be distinguished during that time. if one  
 > were to independently correlate solar and GHG with temp. since 1750,  
 > solar would "explain" about 75% of the variance, GHG about 70% - a  
 > spectacular 140% of the variance explained!  
 >  
 > the only way to evaluate solar is to look at intervals when GHG was  
 > not changing and solar was - the preanthropogenic interval - perhaps  
 > the most comprehensive evaluation of the solar effect is in the  
 > attached paper, where it is quite clear that solar effect is either  
 > negligible or just barely significant, ie., 5-10% of the decadal  
 > scaled variance.  
 >  
 > with respect to the MWP all you have to do is plot the data up and  
 > compile them - the numbers don't work out as being warmer than the  
 > present - at best approaching or slightly exceeding mid-20th c. the  
 > reason is that it was warm at different times. Soon and Baliunas of  
 > course never showed this - but if you actually look at the damn data  
 > and plot up, the same answer as I stated above keeps showing up, over  
 > and over.  
 >  
 > with respect to UAH, there are now two other reconstructions that show  
 > otherwise.  
 >  
 > enough, this is like trying to convert someone with one religion to  
 > another.  
 >  
 > tom  
 >  
 > Chick Keller wrote:  
 >  
 >> Richard and Friends,  
 >>  
 >> thanks for the point of view. I'll put some of this into my  
 >> presentation.  
 >>  
 >> However, it won't wash when facing critics head-on.  
 >>  
 >> Their latest arguments are more subtle. Their main point is that  
 >> their counter information hangs together into a logically coherent  
 >> picture.  
 >>  
 >> Models: no real finger print that distinguishes AGHG forcings from  
 >> others! Models using AGHG forcings predict warming is function of  
 >> latitude yet the Arctic is hardly warming (north of ~65°N), and high  
 >> latitude Antarctic (excepting for the peninsula) is actually cooling  
 >> slightly.  
 >>  
 >> Models: As you say need AGHG forcings to simulate last 30 years of  
 >> observed warming. But, they counter, UAH satellite reductions show

>> no such warming so don't need AGHG forcing (or at least don't need  
>> effects of positive feedbacks and just increases in AGHGs don't cause  
>> so much warming).  
>>  
>> Solar forcing--not able to generate last 30 years of observed  
>> warming. Same counter as last one--"See, they say, no increased  
>> solar in last 25 years is consistent with no warming!!  
>>  
>> Also, since no warming since 1945, MWP most likely to have been as  
>> warm as now and thus sun can indeed explain (with proper lags)  
>> observed warming thus far.  
>>  
>> Their model--climate varies depending on solar activity. all  
>> observations are consistent with this.  
>>  
>> Models predict that any surface warming will be seen in the  
>> troposphere. Since UAH satellite reduction shows no such warming--1.  
>> models are wrong and/or no warming at surface just lousy observations.  
>> 2. If no warming at surface in last 30 years AGHG forcing predictions  
>> by models is incorrect probably due to poor cloud/water vapor  
>> modeling--no positive feedbacks to speak of.  
>>  
>> Sooooo, you can say all you want that all the prestigious societies  
>> and folks say it's AGHGs, but they've been bamboozled by a few of  
>> elitist scientists. As long as satellites show no recent warming,  
>> the entire AGHG hypothesis collapses, not because multi-atomic  
>> molecules don't cause the atmosphere to be more opaque, but because  
>> there are no positive feedbacks which the models need to get the  
>> "right" answer.  
>>  
>> So, what I need is strong evidence that the surface record is indeed  
>> correct (UHI effect is small, and marine boundary layer approximation  
>> is correct).  
>>  
>> Now, Richard, toss in large effects of land use changes and of black  
>> soot forcing changing earth's albedo, and you now have additional  
>> forcings which may be causing warming but can't be countered by  
>> reducing AGHGs.  
>>  
>> Soooo, it still ain't all that easy to convince an audience that the  
>> Singer's of this world aren't on to at least part of the problem.  
>>  
>> AND keep in mind that increased CO2 is good for us--more agriculture,  
>> etc.  
>>  
>> Nope it just ain't that easy. So any information--graphics, etc on  
>> these issues will be greatly appreciated.  
>>  
>> Regards to all,  
>> chick  
>>  
>>  
>> Hi Chick and friends,  
>>  
>> Good to hear from you, Chick. I'm busy, like all of us, and  
>> responding to Singer is not my cup of tea, so I'm glad you and others  
>> are willing. I hate to be in the same room with him, frankly. He's  
>> a third-rate scientist and is ethically challenged, to say the least.  
>>  
>> From others on your email list, I am sure you will receive tons of  
>> useful information. However, I think your entire basic strategy for  
>> confronting Singer might not be optimal. Sometimes the most pressing  
>> issues in the research community, or the most interesting questions  
>> scientifically, are not necessarily the best ways to carry on the  
>> public conversation. I am thinking in particular of your statement:  
>>  
>> "Perhaps the most important is that satellites don't show much  
>> warming since 1979 and disagree substantially with the surface  
>> record, which must then be incorrect. Were we able to resolve this

>> conundrum, I think most of the other objections to human generated  
>> climate change would lose their credibility."  
>>  
>> For what it's worth, here's my take on your approach. I  
>> respectfully disagree with you that hammering away on reconciling the  
>> MSU data with radiosonde and surface data is the right way to go in  
>> dealing with the Fred Singers of the world. Even though much of the  
>> differences may now be apparently explained, it's still a terribly  
>> messy job. The satellite system wasn't designed to measure  
>> tropospheric temperatures, the calibration and orbital decay and  
>> retrieval algorithm and all the other technical issues are ugly, and  
>> nobody knows how much the lower stratospheric cooling ought to have  
>> infected the upper troposphere, among other points one might make.  
>>  
>> No matter what one does on trying to make the MSU data tell us a  
>> clean story, there are remaining serious uncertainties. That's  
>> basically what the NAS/NRC study chaired by Mike Wallace concluded,  
>> and it's still true, in my view. Plus the data record is so short.  
>> In addition, as you say, you are retired, and research on these  
>> things is not what you have first-person experience with, so when you  
>> try to study up on the latest published results, you're at a  
>> disadvantage compared with the Singers of the world, whose full-time  
>> job is to cherry-pick the literature for evidence to support their  
>> preconceived positions.  
>>  
>> One of the tactics of the skeptics is to create the impression among  
>> nonscientists, especially journalists, that the entire science of  
>> climate change rests on the flimsy foundation of one or two lines of  
>> evidence, so that casting doubt on that foundation ought to bring  
>> down the entire structure. For temperature, that approach is clearly  
>> behind the attacks on the "hockey stick" curve over the last 1,000  
>> years or the satellite vs. in situ differences over the last 25  
>> years. Refuting the errors of the papers by Soon and Baliunas or by  
>> McIntyre and Mckittrick doesn't faze these people. They just shift  
>> their ground and produce another erroneous attack. Their goal is not  
>> to advance the science, but to perpetuate the appearance of  
>> controversy and doubt.  
>>  
>> I don't think the skeptics should be allowed to choose the  
>> battlefield, and I certainly don't think the issue of whether  
>> anthropogenic influences are a serious concern should be settled by  
>> looking at any single data set. I do think the IPCC TAR was right to  
>> stress that you simply can't plausibly make GCMs replicate the  
>> instrumental record without including GHGs (and aerosols). I also  
>> think the recent AGU and AMS public statements, which you will  
>> doubtless find on their web sites, are right on target. Many of us  
>> were pleasantly surprised that our leading scientific societies have  
>> recently adopted such strong statements as to the reality and  
>> seriousness of anthropogenic climate change. There really is a  
>> scientific consensus, and it cannot be refuted or disproved by  
>> attacking any single data set.  
>>  
>> I also think people need to come to understand that the scientific  
>> uncertainties work both ways. We don't understand cloud feedbacks.  
>> We don't understand air-sea interactions. We don't understand  
>> aerosol indirect effects. The list is long. Singer will say that  
>> uncertainties like these mean models lack veracity and can safely be  
>> ignored. What seems highly unlikely to me is that each of these  
>> uncertainties is going to make the climate system more robust against  
>> change. It is just as likely a priori that a poorly understood bit  
>> of physics might be a positive as a negative feedback. Meanwhile,  
>> the climate system overall is in fact behaving in a manner consistent  
>> with the GCM predictions. I have often wondered how our medical  
>> colleagues manage to escape the trap of having their entire science  
>> dismissed because there are uncured diseases and other remaining  
>> uncertainties. Maybe we can learn from the physicians.  
>>  
>> People on airplanes, when they find out what I do for a living,  
>> usually ask me if I "believe in" global warming. It's not religion,

>> of course. What I actually tend to believe in, if they really wanted  
>> to try to understand, is quantum mechanics. CO2 and CH4 and all  
>> those other interesting trace gases have more than two atoms, and  
>> that fact simply has inescapable consequences. You just can't keep  
>> adding those GHG molecules indefinitely without making the atmosphere  
>> significantly more opaque in the IR. The "debates" in the reputable  
>> research community are all quantitative. If skeptics don't worry  
>> about doubling, they ought to be pressed to tell us why they are  
>> unconcerned about tripling or quadrupling or worse. That's where the  
>> planet is headed. The fact that remote sensing and model building  
>> are hard work, and that much remains to be done, shouldn't be allowed  
>> to obscure the basic obvious facts.

>>  
>> Bonne chance et bon courage,  
>>  
>> Richard  
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