

A Rational Look at Climate Change

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Is global warming occurring? Yes.

Is it something new? No.

Is it a catastrophe? No.

Is it caused by human activity? Hardly.

Contrary to the infamous "hockey stick" graph used by the IPCC, the earth's climate has fluctuated from hot to cold many times over the past several million years, ranging from ice ages to tropical conditions.

In recorded history, during the period from 1000 AD to 1350 AD the world was warmer by about 2 - 4 degrees Celsius (C) than it is now. During this Medieval Warm Period, Viking colonies were established to grow crops in Iceland and Greenland. This period was followed by the Little Ice Age, when even the Thames River in London froze in the winter. Temperature changes are normal.

Since the mid 18th century, as we continue to emerge from the Little Ice Age, a gradual warming of about 0.6 degrees C per century has been taking place. This increase is rather like the stock market - a general increase over time, but with ups and downs along the way.

From about 1940 to 1975, global cooling created considerable fear of another ice age. Since then, warming resumed, peaking in 1998 due to extreme El Niño conditions. Warming is not uniform over all areas of the globe, and currently most of the warming is in the northernmost third of the globe. Several scientists are now predicting another cooling trend to start soon.

Another factor to consider is that the majority of surface temperature measurements have been taken at airports and other urban areas. Such locations become increasingly warm as population increases. This results in what is known as the urban heat island effect, artificially skewing the temperature data upward. Recent measurements from satellites are considered more accurate, but certain technical problems continue to be a subject of minor revisions.

What's more, factors driving climate change are extremely complex and difficult to prove. Hundreds of scientific articles and papers have been written by international scientists on the numerous issues and assumed causes, with certainly no consensus. The debate is not over. The concept of catastrophic warming due to CO₂ emissions by human activity is still just a theory without scientific proof. Unfortunately, censorship and intimidation, plus politically driven media scare-mongering are inhibiting rational scientific study.

Variations in the sun's behaviour is certainly a key factor. Sun spot intensity due to its electromagnetic activity varies significantly, generally over 11 year cycles, affecting solar radiation received on earth. Several larger cycles affect received radiation even more. The earth's orbit around the sun is not a constant pattern. The angle of inclination of the earth's axis of rotation also varies, plus there is some axis wobble. These factors create a fluctuating distance from the sun to various parts of the globe, which affects the solar energy we receive.

Very recent experiments confirm that cosmic rays of galactic origin affect the condensation of water vapour, thereby significantly influencing our cloud cover and consequentially global temperatures.

Unfortunately, all current media attention is focused on greenhouse gasses. Unlike an actual greenhouse, which is a physical barrier to heat transfer by convection, the "greenhouse effect" is created by the presence of certain gasses distributed throughout the atmosphere. They tend to reflect rising heat from the earth's surface, back to earth. Without this effect, earth's temperature would be about 33 degrees C colder than it currently is. Water vapour and clouds constitute 97% of the greenhouse gasses, with the remainder being CO₂, methane and several others. Water vapour is at least 100 times as effective as CO₂, so small variations in water vapour are more important than large changes in CO₂. Ever notice how cloudy nights are warmer than clear nights?.

CO₂ content in the atmosphere has varied considerably throughout the earth's history. This is well known from various ice core studies.

Cores in polar ice caps show that CO₂ levels rose AFTER warming occurred, not before, thus CO₂ increase is an effect and not a cause. This is logical, since as ocean temperatures rise through increasing solar radiation, they cannot hold as much CO₂ in solution, and it escapes to the atmosphere.

Anthropogenic or man-made CO₂ is a relatively small portion of the total. Reputable sources have calculated that if all countries complied with their Kyoto agreements to reduce CO₂ output, the projected increase in temperature from the year 2000 to 2050 would be reduced by only 0.06 degrees C, which of course is insignificant

CO₂ is required for photosynthesis in plants, and thus is essential for all life. Also, it is the best aerial fertilizer we know about. Research studies show that increasing CO₂ levels to 800 ppm can increase plant growth by up to 40%. CO₂ certainly is NOT a pollutant and does not produce smog.

Computer models used to forecast climate change require billions of calculations and are very sensitive to initial input conditions and assumptions. A modeler can change assumptions to achieve any desired result. They cannot adequately include -- of all things -- the effects of the sun and clouds!

Other concerns over issues such as sea levels rising, extreme weather, etc. are referenced in our website www.friendsofscience.org

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