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Climate Change Factors

What are the major contributors to overall climate change dwarfing any impact of the past centuries of industrialization and the use of coal and oil-based carbon fuels?

Answer: The Sun and the long term Climate Cycle.

The highs and lows, and constancy, of radiant energy from the Sun hitting the Earth have more to do with the warming and cooling of the Earth than any other contributor primarily because the amount of that energy is many thousands times greater than any other energy source – planet-based or universe-based.

The cycles of solar activity and the amount of the Sun's radiant energy hitting the Earth are in lock-step with the resultant Earth's climate and its Climate Cycles.

Solar activity records show decades-long cycles of high and low activity. The daily amounts and types of solar energy that bombard space and radiate the Earth are far greater than any other energy that the planet experiences.

Not only does the Sun's output go through peaks and valleys, the actual energy that floods the Earth, even if the Sun's output was constant, varies due to the Earth's distance from the Sun and the tilted angle of the Earth relative to the Sun as the Earth revolves on its axis and slings around the Sun in its elliptical orbit.

The Earth's elliptical orbit around the Sun causes a variation of several millions of miles closer or farther away from the Sun. The Earth's inclination on its axis keeps the heaviest doses of the Sun's radiation from striking directly over the Earth's equator all the time. These peaks and valleys of the Sun's output and the distances the Sun's energy travels and the angles at which the Earth's features receive that energy are the primary contributors to climate and climate change.

Between the waters and land masses of the Earth, there is more land area in the northern hemisphere and more water area in the southern hemisphere. Land absorbs and retains that energy more than water does. Land tilted directly to the Sun during the closer portions of the Earth's solar orbit get higher doses of the Sun's energy than that land would when it is not tilted more directly to the Sun and the Earth is further from the Sun.

Just that Solar distance versus tilt cycle's energy differential from peak to valley is greater than the total amount of energy mankind can manufacture and has more impact on the Earth's climate and climate change than mankind can produce.

The Sun's energy impact on the Earth is, primarily, the relationship between orbital distances, the Earth's tilt, and the northern hemisphere with its greater land areas absorbing more energy than the southern hemisphere with its greater water areas.

Having the northern hemisphere tilted toward the Sun when the Earth is at its closest orbital distance to the Sun would obviously be a "warmer" Summer than when the northern hemisphere is tilted toward the Sun and the Earth is at its farthest orbital distance from the Sun.

A northern hemisphere Winter with the Earth at its farthest orbital distance would be a "colder" Winter than when the Earth is at its closest orbital distance to the Sun.

The Earth is not making perfect circles in rhythm with its tilt. These closest Summers and farthest Winters grow and recede as the Earth's elliptical orbit itself orbits the Sun on a different cycle.

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Climate Change Factors (continued)

All the while, the huge amounts of energy, and the variations in those amounts of energy from the Sun dwarf the energy that is manufactured on the Earth by multiples of thousands.

The next major climate-maker is the centuries-long and even multi-millennial cycles of warming and cooling that the Earth undergoes. Cold spots melting with waters and winds cooling warm spots. Cooling putting the cold spots back into glacial mode and the cycles and bounces between harsher winters and hotter summers that the global systems of wind and water shuffle.

We are currently more likely in a long-term cooling trend than in a long-term warming trend based on actual recorded measurements of the past hundred years and historical writings of preceding centuries.

These two forces – the massive amounts of energy that the Sun is radiating to the Earth and the cooling or warming stage of the current cycle, which progresses over thousands of years– have created the current climate and the speed and direction of climate change to relatively cooler or relatively warmer.

The long-term geological record is quite compelling on these issues.

Finally, there are extreme events that alter the natural rhythms that the Sun's radiation and the variations in the Earth's orbit create in climate and climate change.

The major "natural" events of asteroid impacts and volcanic activity are the next most influential climate-makers and these can obviously have immediate effects on winds, currents, clouds, particulates in the air and water, and solar energy contradicting or accelerating the current long-term climate change underway.

Geological records that are being correlated from across the globe provide more details of events that had large regional effects as well as truly global effects.

As ancient histories and folk-lore from cultures across time and around the planet are more available for comparative analysis and understanding there is more evidence of large local events such as asteroid hits, immense volcanoes, and glacial barriers breaking and releasing large scale floods.

The impact of these events are also being discovered within the context of the cycles of climate change.

Our egos are stronger than the actual contribution we can make to climate change. The more immediate harm that we do to our air, our waters and ultimately our health and the health of the planet is also very real.

It's the frame that we hang around these harmful activities that is mis-matched. We are not so much tools of climate change – we are not strong enough in our activities to be a major part of that process - notwithstanding the butterfly in Brazil's potential to alter the world.

What we can do is weigh and judge the things we do as stewards for future generations of the Earth and its resources - cleaning up what we can, making less mess as we go and evaluating constantly the methods we employ and the results we produce.

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Send your responses to:
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