

Living on the Moon

Temperatures on the moon are very hot in the daytime, about 100 degrees C. At night, the lunar surface gets very cold, as cold as minus 173 degrees C.

This wide variation is because Earth's moon has no atmosphere to hold in heat at night or prevent the surface from getting so hot during the day.

A single "day" on the moon lasts about 28 Earth days, meaning the lunar daytime is nearly two Earth weeks long.

<http://www.space.com/14725-moon-temperature-lunar-days-night.html>

Today, August 27th 2013, the hottest place on Earth is Palm Springs, where some dear friends of mine are living – I trust. The temperature has reached 134° Fahrenheit, which corresponds to 56.67°Centigrade. This is reckoned to be an all time record.

Just imagine then living on the Moon, where the daytime temperature can reach 123C and the nighttime will drop to MINUS 153C. 123C is more than twice as hot as our hottest day recorded.

On the question of temperature I would like to quote an email that I received from the world renowned Atmospheric Physicist, James A.Peden (4.12.2011): -

"Temperature" is based on a measure of the energy of molecular motion... and indeed, the temperature at the edge of our atmosphere is quite "hot" ... because the molecules, albeit few in number, have a high kinetic energy ... thus technically have a high "temperature".

However, there are very few of them. Therefore the "heat content" is very small.... resulting in very few calories per unit volume. At sea level, there is a pretty good correlation between temperature and heat content: a kettle of boiling water has both a high temperature and high heat content.

But at the edge of space, with very few molecules per unit volume, you have the seemingly paradoxical condition of both high temperature and low heat content.

Ordinary thermometers work by transfer of heat energy from the surroundings to the thermometer. At the edge of space, they simply don't work because there aren't enough surrounding air molecules to counter the natural cooling of an object by radiation. So, trying to measure the temperature via normal methods results in an erroneously low reading. We must remember that all bodies emit Infrared radiation and thus "cool" in the process. A thermometer may read quite low at very high altitudes not because the surroundings are "cold" but because the thermometer is losing heat by radiation and there aren't enough surrounding "hot" air molecules to counter that cooling.

At the Kármán line ... the so-called "edge of space" (about 100 km) there is in fact an abrupt rise in temperature... as solar radiation reacts with the few molecules still in that region, increasing their thermal energy, and thus raising their "temperature".

Now the Moon like us on Earth is some 93million miles from the Sun, yet it is evidently both much hotter and much colder. Why is this? The answer lies in the sentence 'There is no significant **atmosphere on the moon.**'

What does this at once tell us? At the edge of space on what is called the Harman line there are very few molecules – like Outer Space the Thermosphere is almost empty of matter, it is almost a vacuum. But the very few molecules that are there can be extremely hot. (Professor Peden gives no figure for the very good reasons stated in his email.)

The radiation from the Sun has already crossed some 91 - 95 million miles. From the top of the Thermosphere to the level of the sea is a mere 50 or 60 miles, a relatively tiny distance. How then is the surface of the Earth not also similarly hot? Why is the surface of the Earth not 100C –123C like the Moon?

The answer lies in the atmosphere, or rather the fact that we have an atmosphere. Without this atmosphere we should be as hot as the Moon by day and as cold as the Moon by night. In this way we can see that the gases of the atmosphere act as a filter, scattering and absorbing the radiation. In direct sunlight the gases of our atmosphere act as a huge coolant, without which life on earth would be impossible for either man or beast. Out of direct sunlight, as well as at night, those self same gases retain enough heat to prevent the temperature from dropping as low as on the Moon. Even the North and South Poles in the coldest part of their winters do not get as cold as the Moon. Airflows from warmer regions prevent the temperatures from dropping to the same low level as on the Moon.

If we take the lowest level of the atmosphere, which is the Troposphere, where all our weather occurs, we know that the warmest part is right at the surface. At 33,000 feet the temperature is circa Minus 55C. How does all this come about? How is it that we feel warm when sitting or working in the direct sunshine? How is it that cloud cover in the daytime will immediately reduce the effect of the sun?

Radiation has to encounter mass to produce warmth. If we sunbathe we are mass and will experience warmth, even sunburn. The Earth warms up and more importantly the seas and oceans warm. It is the oceans that play the largest part in warming the lower atmosphere, while the atmosphere does very little if anything to warm the oceans.

As the atmosphere warms the warmed air rises, and as it rises it cools. The cold gases cannot heat a warmer earth or oceans, which is the fundamental mistake of the Anthropogenic Global Warmers. The Sun's radiation warms the Earth and the Earth warms the atmosphere, not the other way round.

The Greenhouse Gases play a major role in filtering the radiation of the Sun and thus keeping the Earth cool enough for mankind and the animal kingdom to live on. At night time the Greenhouse gases also inhibit heat loss, so they play a role both in keeping us cool and in keeping us warm, safe from the extreme fluctuations on the Moon. Water vapour in particular acts as a celestial thermostat.

The idea that Carbon Dioxide 'causes' Global Warming is thus seen to be fallacious. The Greenhouse gases do more to cool the Earth than keep it warm, since it is clear that the radiation from the Sun is far mightier than the radiation, infrared, emitted from the earth and oceans.

The idea that Greenhouse gases 'cause' warming is simply not true. Not even the most bigoted Alarmist would claim that these gases generate heat. Nor can they in any way add to the heat that is produced by the radiation from the Sun. Nor can a gas, Carbon Dioxide, trap heat. At most these gases can delay for a very short time the exit of that same said heat, and that would be only at night.

Any layman can learn and understand these principles - from which it is clear that there is no such thing as man-made Global Warming - there never has been and never can be. Far from Greenhouse Gases leading to Global Warming, precisely the opposite is true - without the Greenhouse gases we would all be fried to a cinder!

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(Acknowledging also corrections and additional information from Hans Schreuder.)