

# Estimating the Global Mean Temperature

## **Preamble:**

One of the questions most frequently received here at [JunkScience.com](http://JunkScience.com) is "What is the current global mean temperature?" Certainly a reasonable question given the attention currently paid to Anthropogenic Global Warming (AGW) and one for which you could reasonably expect a good answer. Unfortunately, expectation and reality are far removed.

The absolute global mean surface air temperature is an elusive figure and we should briefly examine *why* this is so.

Before we can attempt to determine an absolute temperature we need to understand and specifically define that which we seek. So, when we talk about 'near-surface' temperatures or even the '[absolute surface air temperature](#),' how exactly are we defining and measuring that? Do we mean the temperature of the air in contact with the Earth's surface? Perhaps it's the temperature 1, 2, 5 or even 50 metres from the surface? Or maybe it's the average of readings every  $n$  metres over a given height from some arbitrary 'absolute surface'? We are not aware of any ISO standard for such a measure nor any agreed method so we are already faced with arbitrary decisions which may not be comparable with any other metrics 'in captivity,' as they say. Obviously, there are many decisions to be made on sampling method, frequency etc. and we will lay out our chosen methodology, or rather, the method we were essentially forced to adopt, in a subsequent section.

With moderate confidence we assert there is no 'magical' point in the Earth's atmosphere where we might conveniently locate a thermometer and take the planet's temperature (thank you, several people have already offered their opinions on metaphorical orifices but we *really are* interested in the global mean temperature). We'll just have to make do with rather more complex and likely less satisfactory measures. While we attempt to derive this wondrous figure we might also ponder some benchmark against which we shall compare our measure that we shall know whether our maternal nurture-figure 'Mother Earth' is fevered or chilled. What is the 'correct' temperature for the planet? Is it the low end of the scale, where Earth has lingered for so many of the last few hundred millennia? Is it to be found in the comparatively warmer climes of interglacial periods, where the biosphere has thrived and human societies prospered? We cannot tell you what is the 'right' number or even trend but there are no prizes for guessing our preferred end of the scale.

We need to understand also that the atmosphere is not static but volatile and highly dynamic. We lack the capacity to capture simultaneous 'single state' measures around the globe and throughout the atmosphere and we must realise that *Omar Khayyam's* words apply particularly well to atmospheric temperature – rather than: "*The moving finger writes, and having written moves on. Nor all thy piety nor all thy wit, can cancel half a line of it*" we should consider the convections and thermals constantly churning our atmosphere – having sampled free air temperature, will it ever be the same again or is it like trying to "step in the same river twice"?

**Hopeless task?** Perhaps it is but whether our numbers are any worse than anyone else's you'll have to work out from our methodology and results.