

Climate Change Q&A



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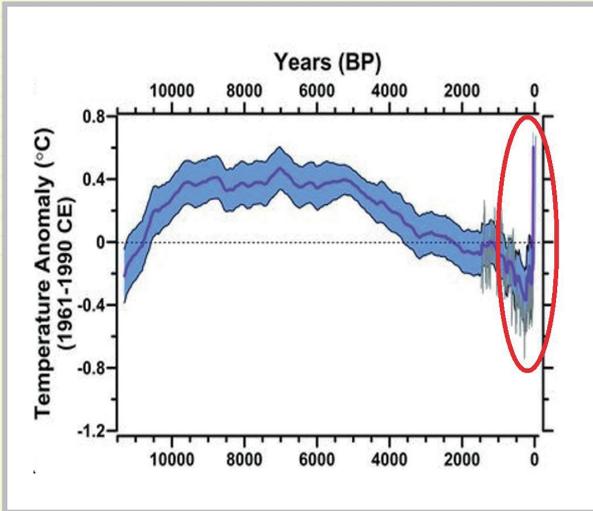
Brief Notes on the Latest Developments in Climate Change

Q: It was so cold last winter, and there were even severe snowstorms in North America. Has global warming stopped?

A: Last winter was colder than normal in the eastern and central parts of North America, but warmer than normal in the western part. What's more, Australia registered record high annual temperatures in 2013 and was still being affected by heatwaves early this year. We cannot just focus on short-term fluctuations and ignore the long-term trend. If we look at the long-term variation in global temperature data, the warming trend is loud and clear.

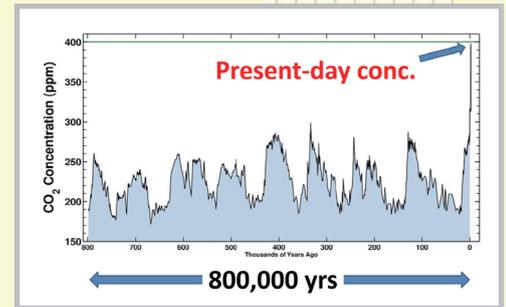
Q: The climate has been changing since the beginning of time, so isn't that just due to natural factors?

A: In the distant past, global climate changes were indeed caused by natural factors, and the gradual decline of the earth's temperature over the last 5,000 years was also a natural phenomenon. But the global temperature has risen sharply over the past century or so, reversing the trend of the preceding five millennia. In the past, the concentration of carbon dioxide in the atmosphere changed regularly, but never exceeded 300 ppm. It has increased consistently since the Industrial Revolution, however, and is now over 400 ppm, the highest concentration in the past 800,000 years. These drastic changes cannot be simply explained by natural factors.



Reconstructed global temperature anomalies regarding the 1961-1990 average for the past 11,300 years (purple line with uncertainty in blue band). A previous reconstruction by another study is shown by the grey line. Years (BP) refer to years before 1950.

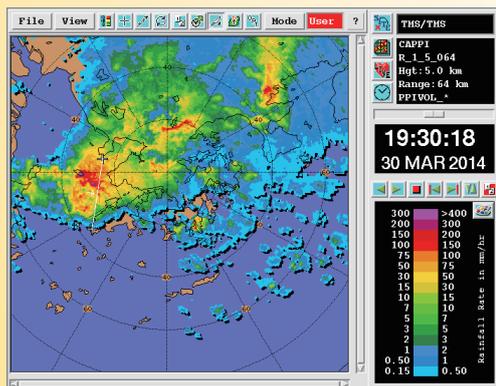
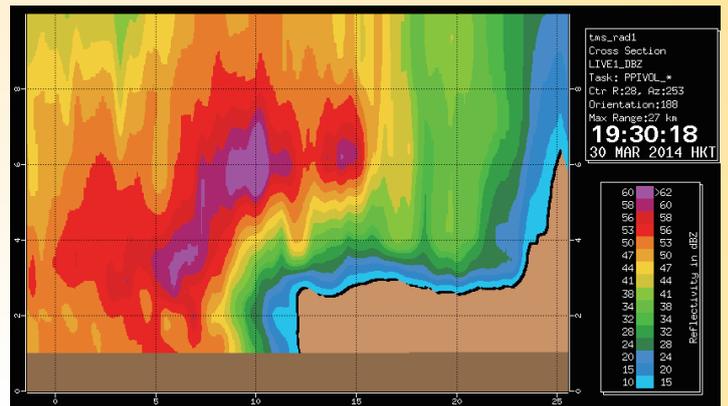
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Ask Dr Tin

Why is there hail when the temperature is over 20 degrees?

The airflow that causes hail is tilted. The vertical cross section of this radar picture taken during the hailstorm on 30 March clearly shows the over-hang feature of this phenomenon.



Generally speaking, hail is caused by intense thunderstorms or severe convective weather. Imagine a refrigerator with a big fan installed at the bottom that constantly blows water vapour from the bottom to the freezer compartment at the top. The water vapour will turn into small ice droplets, which then roll in the updraft produced by the fan, getting bigger and bigger. When the updraft can no longer support the weight of the ice droplets, they fall to the ground as hail.

For more information on hail, please see:

www.weather.gov.hk/education/edu01/met/wxphe/ele_hailstorm.htm (Chinese only).