

## **Earth on the Brink of an Ice Age**

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The earth is now on the brink of entering another Ice Age, according to a large and compelling body of evidence from within the field of climate science. Many sources of data which provide our knowledge base of long-term climate change indicate that the warm, twelve thousand year-long Holocene period will rather soon be coming to an end, and then the earth will return to Ice Age conditions for the next 100,000 years.

Ice cores, ocean sediment cores, the geologic record, and studies of ancient plant and animal populations all demonstrate a regular cyclic pattern of Ice Age glacial maximums which each last about 100,000 years, separated by intervening warm interglacials, each lasting about 12,000 years.

Most of the long-term climate data collected from various sources also shows a strong correlation with the three astronomical cycles which are together known as the Milankovich cycles. The three Milankovich cycles include the tilt of the earth, which varies over a 41,000 year period; the shape of the earth's orbit, which changes over a period of 100,000 years; and the Precession of the Equinoxes, also known as the earth's 'wobble', which gradually rotates the direction of the earth's axis over a period of 26,000 years. According to the Milankovich theory of Ice Age causation, these three astronomical cycles, each of which effects the amount of solar radiation which reaches the earth, act together to produce the cycle of cold Ice Age maximums and warm interglacials.

Elements of the astronomical theory of Ice Age causation were first presented by the French mathematician Joseph Adhemar in 1842, it was developed further by the English prodigy Joseph Croll in 1875, and the theory was established in its present form by the Czech mathematician Milutin Milankovich in the 1920s and 30s. In 1976 the prestigious journal "Science" published a landmark paper by John Imbrie, James Hays, and Nicholas Shackleton entitled "Variations in the Earth's orbit: Pacemaker of the Ice Ages," which described the correlation which the trio of scientist/authors had found between the climate data obtained from ocean sediment cores and the patterns of the astronomical Milankovich cycles. Since the late 1970s, the Milankovich theory has remained the predominant theory to account for Ice Age causation among climate scientists, and hence the Milankovich theory is always described in textbooks of climatology and in encyclopaedia articles about the Ice Ages.

In their 1976 paper Imbrie, Hays, and Shackleton wrote that their own climate forecasts, which were based on sea-sediment cores and the Milankovich cycles, "... must be qualified in two ways. First, they apply only to the natural component

of future climatic trends - and not to anthropogenic effects such as those due to the burning of fossil fuels. Second, they describe only the long-term trends, because they are linked to orbital variations with periods of 20,000 years and longer. Climatic oscillations at higher frequencies are not predicted... the results indicate that the long-term trend over the next 20,000 years is towards extensive Northern Hemisphere glaciation and cooler climate."

During the 1970s the famous American astronomer Carl Sagan and other scientists began promoting the theory that 'greenhouse gasses' such as carbon dioxide, or CO<sub>2</sub>, produced by human industries could lead to catastrophic global warming. Since the 1970s the theory of 'anthropogenic global warming' (AGW) has gradually become accepted as fact by most of the academic establishment, and their acceptance of AGW has inspired a global movement to encourage governments to make pivotal changes to prevent the worsening of AGW.

The central piece of evidence that is cited in support of the AGW theory is the famous 'hockey stick' graph which was presented by Al Gore in his 2006 film "An Inconvenient Truth." The 'hockey stick' graph shows an acute upward spike in global temperatures which began during the 1970s and continued through the winter of 2006/07. However, this warming trend was interrupted when the winter of 2007/8 delivered the deepest snow cover to the Northern Hemisphere since 1966 and the coldest temperatures since 2001. It now appears that the current Northern Hemisphere winter of 2008/09 will probably equal or surpass the winter of 2007/08 for both snow depth and cold temperatures.

The main flaw in the AGW theory is that its proponents focus on evidence from only the past one thousand years at most, while ignoring the evidence from the past million years -- evidence which is essential for a true understanding of climatology. The data from paleoclimatology provides us with an alternative and more credible explanation for the recent global temperature spike, based on the natural cycle of Ice Age maximums and interglacials.

In 1999 the British journal "Nature" published the results of data derived from glacial ice cores collected at the Russia's Vostok station in Antarctica during the 1990s. The Vostok ice core data includes a record of global atmospheric temperatures, atmospheric CO<sub>2</sub> and other greenhouse gases, and airborne particulates starting from 420,000 years ago and continuing through history up to our present time.

The graph of the Vostok ice core data shows that the Ice Age maximums and the warm interglacials occur within a regular cyclic pattern, the graph-line of which is similar to the rhythm of a heartbeat on an electrocardiogram tracing. The Vostok data graph also shows that changes in global CO<sub>2</sub> levels lag behind global temperature changes by about eight hundred years. What that indicates is that global temperatures precede or cause global CO<sub>2</sub> changes, and not the reverse. In other words, increasing atmospheric CO<sub>2</sub> is not causing global temperature to

rise; instead the natural cyclic increase in global temperature is causing global CO<sub>2</sub> to rise.

The reason that global CO<sub>2</sub> levels rise and fall in response to the global temperature is because cold water is capable of retaining more CO<sub>2</sub> than warm water. That is why carbonated beverages lose their carbonation, or CO<sub>2</sub>, when stored in a warm environment. We store our carbonated soft drinks, wine, and beer in a cool place to prevent them from losing their 'fizz', which is a feature of their carbonation, or CO<sub>2</sub> content. The earth is currently warming as a result of the natural Ice Age cycle, and as the oceans get warmer, they release increasing amounts of CO<sub>2</sub> into the atmosphere.

Because the release of CO<sub>2</sub> by the warming oceans lags behind the changes in the earth's temperature, we should expect to see global CO<sub>2</sub> levels continue to rise for another eight hundred years after the end of the earth's current Interglacial warm period. We should already be eight hundred years into the coming Ice Age before global CO<sub>2</sub> levels begin to drop in response to the increased chilling of the world's oceans.

The Vostok ice core data graph reveals that global CO<sub>2</sub> levels regularly rose and fell in a direct response to the natural cycle of Ice Age minimums and maximums during the past four hundred and twenty thousand years. Within that natural cycle, about every 110,000 years global temperatures, followed by global CO<sub>2</sub> levels, have peaked at approximately the same levels which they are at today.

About 325,000 years ago, at the peak of a warm interglacial, global temperature and CO<sub>2</sub> levels were higher than they are today. Today we are again at the peak, and near to the end, of a warm interglacial, and the earth is now due to enter the next Ice Age. If we are lucky, we may have a few years to prepare for it. The Ice Age will return, as it always has, in its regular and natural cycle, with or without any influence from the effects of AGW.

The AGW theory is based on data that is drawn from a ridiculously narrow span of time and it demonstrates a wanton disregard for the 'big picture' of long-term climate change. The data from paleoclimatology, including ice cores, sea sediments, geology, paleobotany and zoology, indicate that we are on the verge of entering another Ice Age, and the data also shows that severe and lasting climate change can occur within only a few years. While concern over the dubious threat of Anthropogenic Global Warming continues to distract the attention of people throughout the world, the very real threat of the approaching and inevitable Ice Age, which will render large parts of the Northern Hemisphere uninhabitable, is being foolishly ignored.

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