
Greenland Ice Sheet Growing: What Makes an Ice Age?

Have you been duped by a mass of propaganda about global warming? 21st Century Science & Technology Editor Laurence Hecht explains why the Earth is poised to enter a new glaciation.

Despite mountains of propaganda to the contrary, a mountain of ice in the center of Greenland has been growing over the recent decade. The floating ice on the East Antarctic ice shelf is growing too, adding a much greater mass of sea ice than was lost in the much-publicized collapse of the West Antarctic shelf.

These are among the surprising results of a study of ice-mass changes from 1992-2002, which just appeared in the *Journal of Glaciology*. The study, which went counter to many expert estimates, is based on the most precise satellite altimetry data ever gathered, using the European Remote-sensing Satellites ERS-1 and 2, and other observations.

The increases in Greenland ice and Antarctic sea ice are outweighed, however, by a slight decrease in the ice buildup on the Antarctic land mass. This net excess of melted ice over newly frozen ice would increase the global sea level—but not by very much. Its net contribution to sea level comes to +0.05 millimeters per year, with an error margin of +/-0.03 mm. Thus, in a decade, the contribution to sea level increase from the melting ice would have amounted to from 0.2 to 0.8 millimeters—that is, less than 1/30 of an inch!

The most important thing to recognize about this latest study, is that it says nothing about the future of the Earth's climate. No short-term climate trend can tell us that, because the primary determinants of Earth's climate are based on orbital-astronomical cycles of 21,000-, 40,000-, and 100,000-year duration. Understanding these orbital cycles

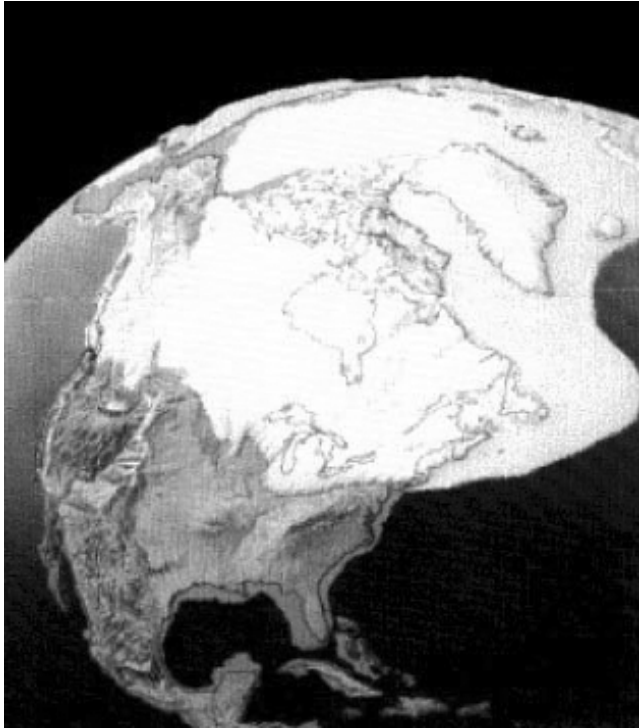
is the key to being able to interpret for yourself, with a clear head, the mass of propaganda dished out every day by the global warming lobby, and to seeing why global warming itself is a myth.

Astronomy Determines Climate

In the first decades of the 20th Century, a scientific theory of climate emerged, based on the effects of three long-term cycles in the Earth's orbital relationship to the Sun. It was based on the work of the Russian-German meteorologist Vladimir Koppen (1846-1940), his son-in-law Alfred Wegener (the originator of the theory of continental drift), and the Serbian mathematician Milutin Milankovich. Their work drew upon a 19th-Century tradition which originated with an hypothesis of the German-English astronomer John Herschel.

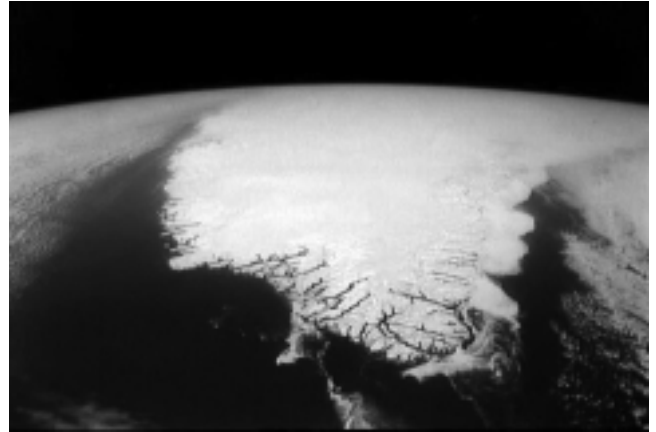
The key idea is that the amount of solar radiation (insolation) received at the Earth's surface varies, not only with the seasons, but with these longer-term variations in the Earth's orbit. Over time, it was shown that the major changes in climate of past epochs correlated with these orbital cycles.

In the 19th Century, geologists had noted a wide array of observations which indicated that the Northern Hemisphere had passed through one or more cycles of glaciation. As these observations were correlated over different parts of the Earth, it appeared that a sheet of ice had moved down from Greenland and the Polar region, burying the northern parts of North America and Eurasia in ice from one to two miles thick.



NASA

An ice sheet from 1 to 2 miles thick covered North America down to New York and Chicago until about 11,000 years ago.



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The southern end of the Greenland ice sheet.

The Glacial Cycles

At the turn of the 20th Century, it was thought that two to four such glaciation cycles had occurred, interspersed by periods of warmth. But further refinement showed that the Northern Hemisphere had passed through cycles of glaciation, interspersed by brief warmings, known as interglacials, almost every 100,000 years over the past 1.8 to 2 million years (**Figure 1**). The last 100,000-year glacial cycle achieved its maximum extent just 18,000 years ago, when North America was covered with a sheet of ice from one to two miles thick, reaching as far south as New York City, and Chicago.

The science of climatology in the 20th Century showed that these changes in glaciation followed a cycle which closely correlated with the three major long-term variations in the Earth's orbit. Thus, if we can understand these orbital cycles, we can have a good idea what to expect in terms of climate. Let us briefly examine the three.

Three Orbital Cycles

We begin with the angle of inclination of the Earth's axis to the plane of the ecliptic (the plane of revolution of the Earth's orbit), also known as the Earth's obliquity. Today, this angle is approximately 23.5° . But over a period of approximately 40,000 years, it can vary from slightly under 20° to 24° . (These variations are due to the perturbations in the Earth's orbit caused by the influences of the other planets,

especially the very large one, Jupiter.) When the angle of inclination is smaller, the seasonal difference between the poles and the equator is moderated. If there were no inclination, there would be no seasons.

We see that the Earth in the present epoch, at 23.5° inclination, is experiencing a high degree of orbital inclination. This means that the temperature extremes at the poles are great.

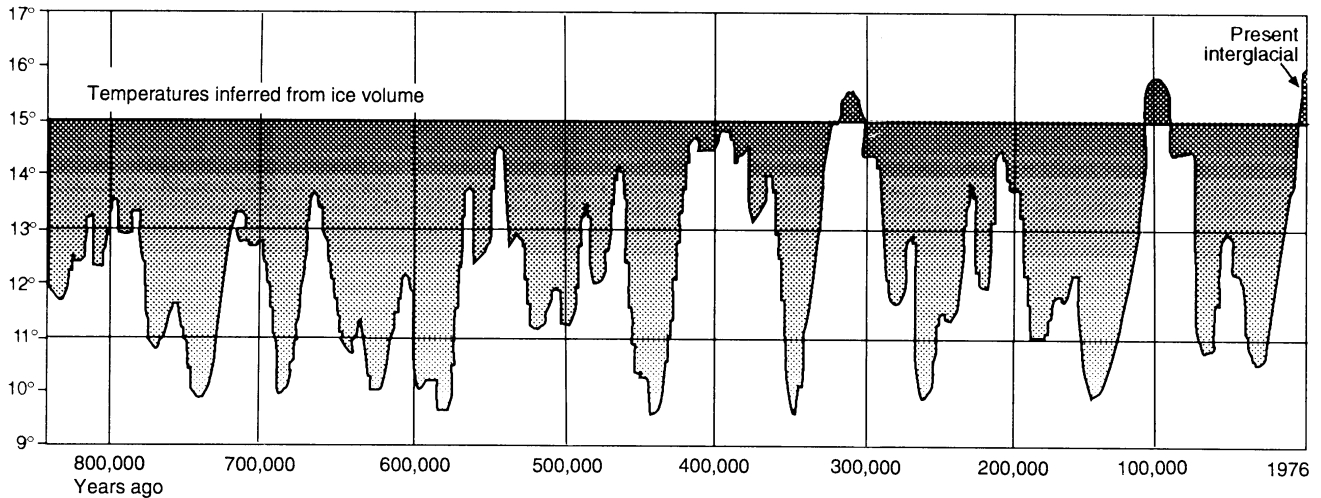
We look next at the orbital cycle known as the precession of the equinox. The Earth's axis does not always point to the same position in the heavens. Over the course of about 26,000 years the Earth makes a wobbling motion like a top, such that the axis traces a cone in the sky. One effect of this is to change the position of the Pole Star. Today, it is near Polaris in the Little Dipper. About 13,000 years ago, it was near the star Vega in the constellation Lyra (**Figure 2**). The term "precession of the equinox" comes from the fact that ancient astronomers observed a gradual change in the alignment of the Sun against the background of stars, as it rose on the first day of Spring (vernal equinox).

The effect upon climate of this conical wobble depends upon the interplay of two geometric features—the angle of inclination already discussed, and the fact that the Earth's orbit is not a circle, but an ellipse with the Sun at one focus. The variation in insolation which it produces depends in part upon Kepler's equal-area law. We call the two extreme positions of the orbit, perihelion (closest to the Sun), and aphelion (farthest away).

Recall that the seasons are caused by the inclination of the Earth's axis. Northern Hemisphere Summer occurs when the Earth's axis is tilted toward the Sun, allowing the Sun's rays to strike more directly. However, Summer may occur either at perihelion or aphelion. Presently, the axis is so inclined with respect to the precession cycle that Northern Hemisphere Summer is occurring almost at the greatest distance from the Sun (**Figure 3**). Summer occurred at aphelion in approximately the year 1250—quite recently on this timescale. This leads to cooler Summers in the North, mean-

FIGURE 1

The Last Eight Glacial Cycles



Source: Adapted from Samuel W. Matthews, "What's Happening to Our Climate," *National Geographic* (Nov. 1976), p. 576

Figure shows the approximately 100,000-year long cycles of glacial advance and retreat.

ing that snow and ice which forms in the Winter is not melted off so easily.

The third key cycle is the approximately 100,000-year variation in the shape of the orbital ellipse itself, which passes from quite eccentric to almost circular. When the eccentricity is small, the difference in insolation at aphelion and perihelion is slight. The eccentricity of the orbit can vary from near 0 to 0.07. At maximum, the variation of insolation between perihelion and aphelion is approximately 28%. The present value is 0.017, which can cause a variation of insolation of approximately 7%. This low value of eccentricity is the one astronomical factor that could cause a delay in the onset of the next glaciation.

The Politics of Global Warming

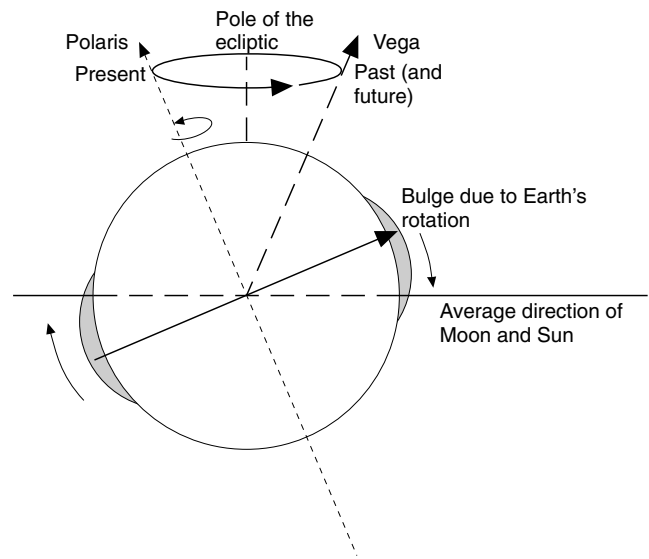
It should be understood that the Earth is in an Ice Age today. The presence of numerous glaciers and the huge Greenland and Antarctic ice sheets tell us this. The question is: When is the Northern Hemisphere going to re-enter a period of glacial advance like the one that just ended about 10-12,000 years ago? The orbital cycles tell us that we are due for a new glaciation. In the past, the 100,000-year cycles of heavy glaciation were punctuated by a meltback or interglacial period, lasting from 9,000 to 12,000 years.

The present interglacial is roughly 10,700 years old. We are thus ripe for an onset of glaciation. However, no short-term trend on the decadal or even century-long scale is likely to tell us whether a glaciation is about to start or not.

All serious climatologists know these things. The reason you rarely hear about them is that a propaganda machine was

FIGURE 2

Precession and Change of the Pole Star



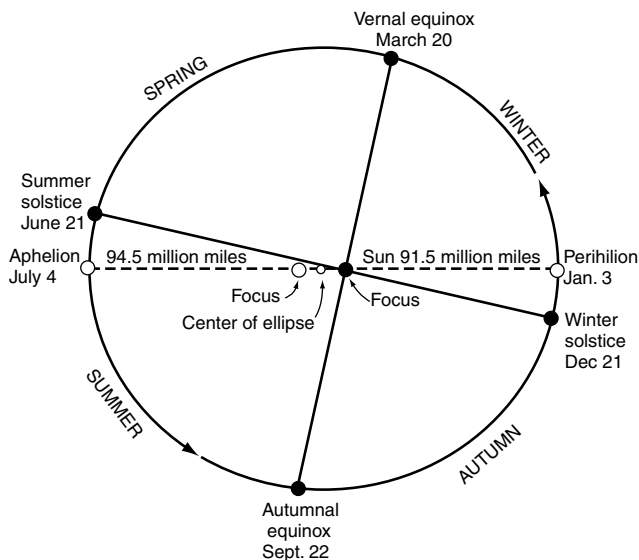
Source: *21st Century Science & Technology*, Winter 1993-1994.

The Earth's spin axis makes a complete rotation round the pole of the ecliptic in approximately 26,000 years. The North Star is now Polaris, but about 13,000 years ago, it was Vega.

created, as part of the paradigm shift to a so-called "post-industrial" society, to promote the global warming myth. The purpose was to fulfill the Malthusian prescriptions laid out

FIGURE 3

Earth's Distance From the Sun and Position of Solstice on the Ellipse



Source: Data from J.D. Hays et al., in John Imbrie and Katherine Palmer Imbrie, *Ice Ages: Solving the Mystery*.

The Summer solstice in the Northern hemisphere is now near aphelion, when the Earth is at its maximum distance from the Sun, one of the orbital conditions for glacial advance.

in such documents as Kissinger's National Security Study Memorandum 200 of 1974 and the Carter Administration's Trilateral Commission-authored policy of "Global 2000." These racist and anti-human formulations argued that a growing world population, especially of non-white people, represented a danger and security threat to the people of the United States. The connection was made easy enough for a fool to understand: Economic development means industry and the burning of hydrocarbon fuels; burning hydrocarbons produces carbon dioxide; carbon dioxide produces global warming. This myth was promoted beginning in the early 1980s by financial circles associated with Aurelio Peccei and Alexander King's Club of Rome, Dame Margaret Mead, and top operatives of the environmentalist movement owned by Britain's Prince "Reincarnate me as a virus" Philip and former card-carrying Nazi Prince Bernhard of the Netherlands.

Climate scientists have been under enormous pressure for two decades to adapt their views to the global warming myth. Perhaps some have come to believe it. Even if they don't, the propaganda mill, headed by the prestigious journals *Science* and *Nature*, may construe it to be so. Typical is the coverage in the March 24, 2006 issue of *Science*. According to *Science*, H. Jay Zwally, author of the definitive study which shows that the Greenland ice mass increased from 1992-2002, now thinks the trend has changed. There is no evidence for it, and

Zwally never says that there is. No careful scientist would. But *Science* propagandist Richard Kerr, portrays it otherwise. Zwally is quoted as saying that "there's been an acceleration of some of Greenland's glaciers over the last 5 years," after his surveys were completed. The statement is of no conclusive consequence. Kerr nonetheless skillfully weaves it into his fabric of deceit. Finally Kerr cites what he, not the scientist, calls Zwally's "gut feeling" about the most recent radar and laser observations.

In reality, the whole debate is incompetently framed, because such short term trends do not prove anything. There have been at least three cyclic warmings and coolings within our present interglacial. The climatic optimum peaked 7,000 years ago, when the average air temperature, inferred from ice volume, was about 2°F higher than at present. That was around the time that the Indian scholar B.G. Tilak provides as the most recent possible date for the composition of the *Rig Vedas*, when the vernal equinox was in Orion. His hypothesis of the polar origin of the Indo-European language group, however, does not exclude a dating to an earlier precession cycle.

The two long-term warming cycles which occurred from roughly 4,000 to 8,000 years before the present could have little to do with the greenhouse warming allegedly caused by industrial production of carbon dioxide. A Little Ice Age began about 650 years ago, and lasted into the 19th Century. Since then, the Earth has warmed slightly, but average temperature has not neared the optima of 7,000 and 4,500 years ago.

The reasons for these shorter-term trends in climate are not fully understood. Many factors, including the position of the Earth in the galaxy, changes in the Sun's output, smaller cyclical variations in the Earth's orbit, ocean circulation currents, and others may be the causes.

The study of these phenomena is a welcome part of current science. Historical climatology, combined with universal philology of the sort exemplified by Tilak's work, can also contribute greatly to unraveling some of the mysteries of the human past. It is unfortunate, that the imposition of the global-warming hoax since 1980, continues to taint scientific studies and the output of many leading scientific institutions.

For Further Reading

- From *21st Century Science & Technology* at www.21stcenturysciencetech.com:
- Laurence Hecht, "The Coming (or Present) Ice Age" (Winter 1992-93).
- Zbigniew Jaworowski, "Ice Core Data Show No Carbon Dioxide Increase" (Spring 1997).
- Zbigniew Jaworowski, "The Ice Age Is Coming!" (Winter 2003-04).

Other Sources

- John Imbrie and Katherine Palmer Imbrie, *Ice Ages: Solving the Mystery* (Hillside, N.J.: Enslow Publishers, 1979).
- H.J. Zwally et al., "Mass Changes of the Greenland and Antarctic Ice Sheets and Shelves and Contributions to Sea-Level Rise: 1992-2002," *Journal of Glaciology*, Vol. 51, No. 175 (2005).