The Big Arctic Melt: All Hype and Scare

Refuting hysterical claims that the ice of the Arctic is disappearing because of man-made CO_2, real science shows a refreeze in the Arctic, and a record snowfall in Antarctica. By Gregory Murphy.

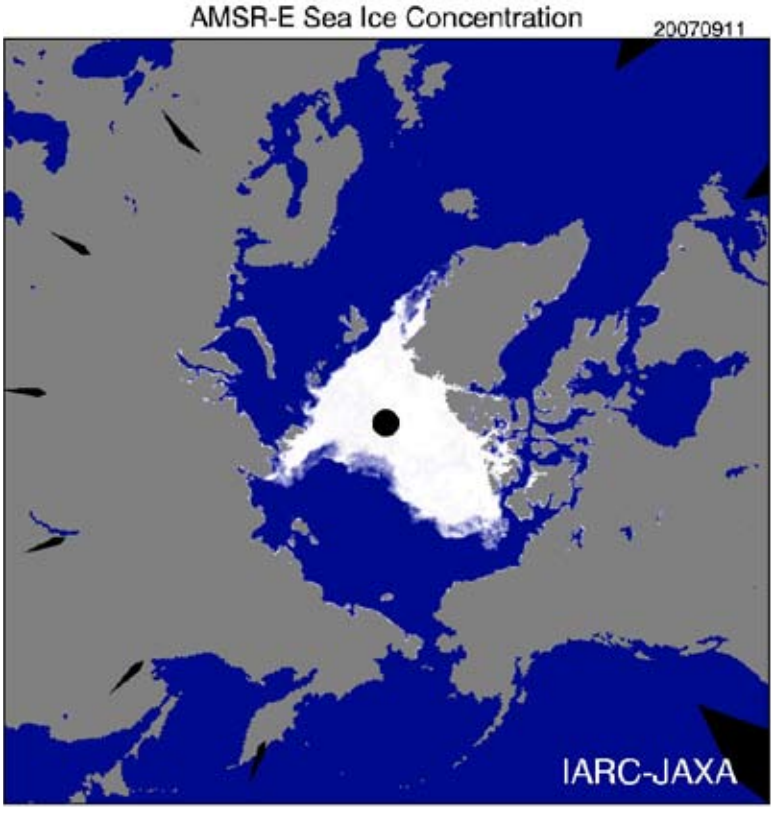
The latest scare in Al Gore's global warming house of horrors is that the Arctic ice cap will melt, producing a catastrophic sea-level rise and making the polar bear extinct—all because of man-made climate change.

But after the great melt scare, none of the press bothered to tell the public that there is now a great refreeze, *a record early refreeze* that has transformed all that melt to ice! Even the National Oceanographic and Atmospheric Administration (NOAA), when questioned by a scientist, admitted that it had no intention of updating its melt statistics (and press releases) with similar numbers on the refreeze.

And where is the *New York Times* article on the refreeze, to take just one media example? This "newspaper of record" has published scary articles saying that this year's Arctic Sea ice melt was the largest since the start of satellite monitoring of the ice caps in 1979. One article, written by Nicholas Kristof, appeared Aug. 16, titled "The Big Melt," and two others, written by Andrew Revkin, "Arctic Sea Ice Melting Faster, a Study Finds" (May 1), and "Scientists Report Severe Retreat of Arctic Ice" (Sept. 21.), are prime examples of alarmist rants designed to get the reader concerned about global warming. Yet, the articles fail to say anything about the real scientific factors which influence the Arctic ice cycle, which caused this year's record sea ice melt.

The Kristof and Revkin articles promote the climate model study published in the May issue of the American Geophysical Union's *Geophysical Research Letters*, written by Marika M. Holland (of the National Center for Atmospheric Research) et al. The

FIGURE 1a
This Year's 'Record' Arctic Sea Melt...



On Sept. 11, 2007, scientists recorded the largest Arctic sea ice melt since the 1978 start of satellite monitoring of the Arctic—but not the largest melt ever, as claimed. This satellite image (showing the ice as white) was produced using the new Advanced Microwave Scanning Radiometer for the Earth Observing System onboard the Aqua satellite.
Sources: International Arctic Research Center and Japan Aerospace Exploration Agency.

main purpose of this study, "Arctic Sea Ice Decline: Faster Than Forecast," is to show that the Arctic Sea ice would melt at a faster rate, concluding that the Arctic would be ice-free by 2030.

It should be noted that since the paper was published, the phrase about being "sea-ice-free by 2030" has been changed to a milder version: "the Arctic will experience ice-free summers by 2030." But again the media has not picked up this retreat from Arctic alarmism, and still promotes Al Gore's lies.

Unreliable Climate Models

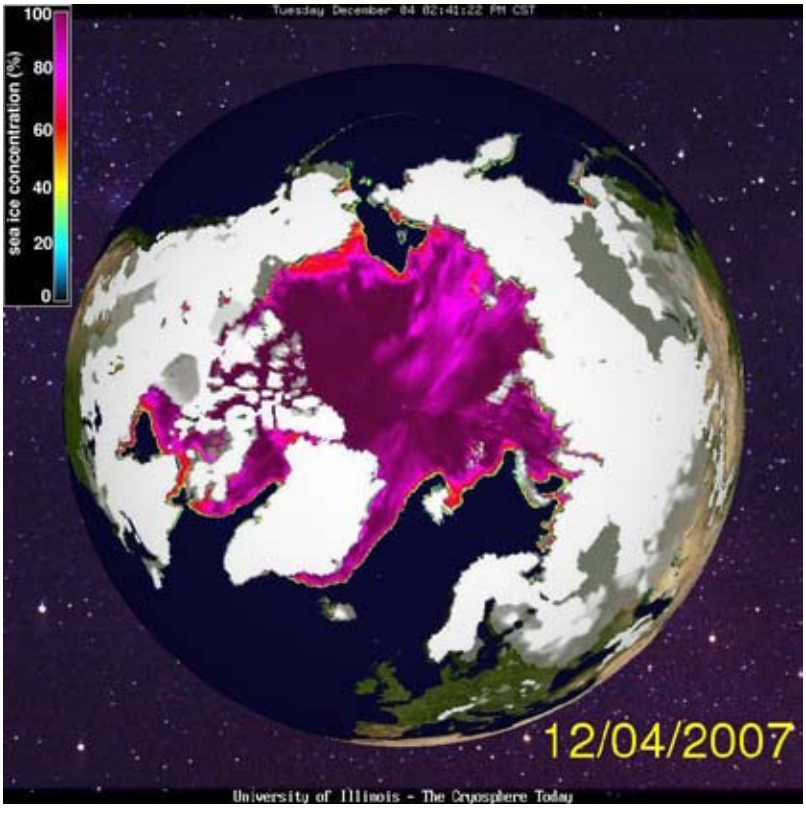
The British press has also been up front in the ice-melt alarm. On July 3, *The Guardian*'s resident climate ranter (and LaRouche-hater) George Monbiot wrote a column entitled "Global Warming: The Sudden Change of State," saying that he had just "finished reading a scientific paper on the train this weekend, [when] I found, to my amazement, that my hands were shaking. This has never happened to me before, but nor have I ever read anything like it." The paper that Monbiot was talking about was published by a team led by global-warming scientist James Hansen. Hansen's paper says that the sea-level estimates of the Intergovernmental Panel on Climate Change (IPCC) were not alarmist enough, that Arctic Sea ice can undergo a very fast change and melt very quickly. (Hansen, by the way, is the NASA scientist who claims that he was "muzzled" by the Bush Administration, although he managed to give 2,000 interviews on global warming.)

As Monbiot notes, Hansen's paper says that 25 million years ago, the temperatures were 3-5°C warmer than today, and sea levels rose *25 meters*, not just the approximately 1 meter that the IPCC forecasts for the next 100 years, in its latest report. Monbiot thus uses Hansen's data to invoke fear in the reader by saying that the IPCC is *grossly underestimating* the problem.

Hansen's paper, "Climate Change and Trace Gases," published in the *Philosophical Transactions of the Royal Society* on May 18, says that sea levels will rise 25 meters—or is it 95 miles? It is hard to tell, since this hysterical paper, like that of Holland et al., is based on unreliable climate models.

FIGURE 1b

...And This Year's Record Arctic Refreeze



This satellite image of the Arctic from Dec. 4 shows that the much-hyped Arctic sea ice melt this year has been refreezing at a near record rate, which has led researchers to speculate that the Arctic ice cap will completely close by the start of the new year. (Ice concentrations are the darker areas.) This near-record refreezing is not being acknowledged in the media, and has been only quietly mentioned on the National Snow and Ice Data Center webpage.

The same May issue of *Geophysical Research Letters* in which the paper by Holland et al. appears, publishes another paper written by Ian Eisenman, of the Department of Earth and Planetary Sciences at Harvard University, which attacks the unreliabilty of global climate models (GCMs), in simulating Arctic Sea ice conditions. This paper points out that climate models cannot accurately model the changes in clouds, or even the effects of ice albedo (the extent to which it reflects light), and concludes that Arctic Sea ice models cannot be relied upon for credible predictions of the future.

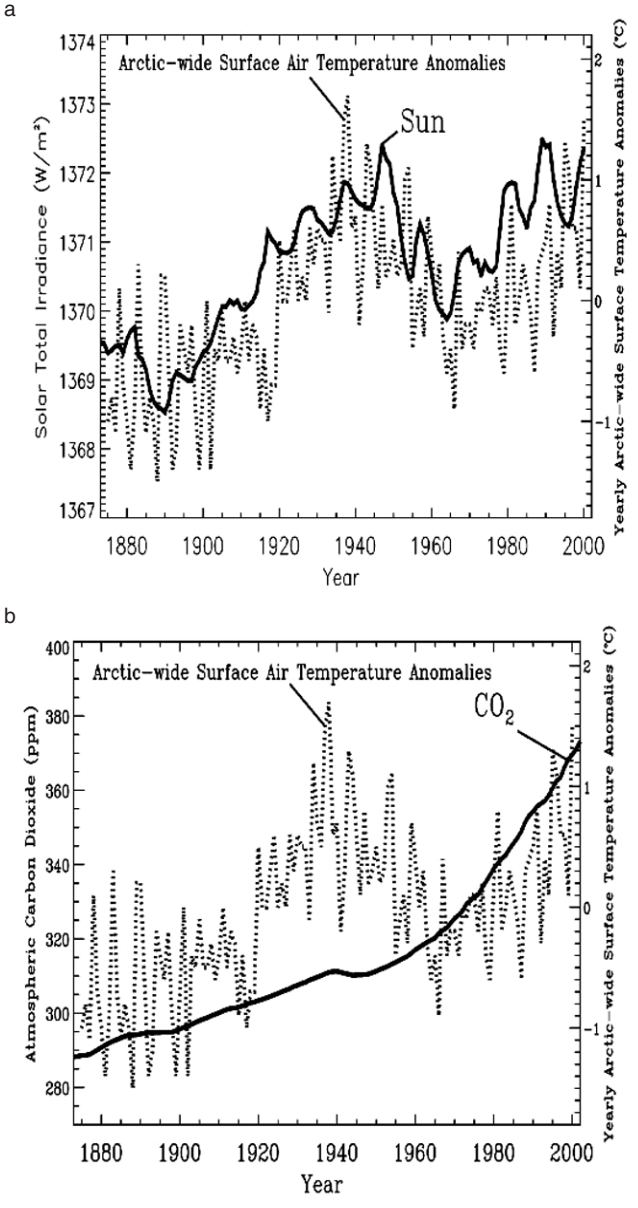
Eisenman states: "These results suggest that most state-of-the-art GCMs are simulating observationally consistent present day ice cover because the model errors associated with simulated cloudiness are being compensated by tuning parameters such as the ice albedo. In other words, errors in parameter values are being introduced to the GCM sea ice components to compensate for simulation errors in the atmospheric components. Hence the widely anticipated and advertised demise of multi-year sea ice in the Arctic Ocean cannot be effectively argued on the basis of GCM predictions taken at face value."

At an Oct. 30 meeting of the American Association for the Advancement of Science in Washington, D.C., Dr. Richard Alley, a climatologist at Pennsylvania State University, stated that the only way to model the ice flows and ice sheets was to model them as a big white blob that is not coupled to the ocean and does not move! Alley admitted, in response to a question about how the ice sheets are modelled, that this

does not translate into reality—a good reason that the models should not be trusted to determine policy.

Readers should keep in mind the fact that the "record" sea ice melt they are hearing about is only based on the last 29 years of satellite monitoring. But even as recently as the 1930s, Arctic temperatures were 2-5°C warmer than today. *That actual measured temperature in the 1930s is even larger than the temperature the IPCC is projecting for the next 100 years!*

FIGURE 2
The Sun, Not CO_2, Correlates to Arctic Temperature



The annual mean Arctic-wide surface air temperature anomalies (dotted lines) are shown here compared with Solar activity (Solar irradiance in watts per square meter) in (a) and CO_2 in parts per million in (b). There is a good correlation of temperature with the Sun, and a lack of correlation with CO_2, emphasizing that carbon dioxide plays only a tiny role in determining the climate of the Arctic.
Source: Willie Soon, 2005.

Until the era of satellite monitoring, sea-ice records were pulled together from ship logs and buoy-monitoring systems. With the advent of the nuclear-powered submarine in the 1950s, which for the first time, made possible a sonar mapping of the Arctic ice pack, the monitoring became more accurate. When these records were pulled together, there was a large error margin; satellite data, in comparison, have only a 10% error margin. So it has been only in the past 29 years that researchers have had reliable data on the state of the Arctic ice pack, and this relatively short period of time is not enough to truly determine the natural cycle of the Arctic Sea ice. With so short a period of data, how can the computer models even come close to predicting what the sea ice pack will look like in, say, 50 years?

The Real Science Behind Arctic Climate

Now that we have looked at the unreliabilty of climate models, and the hype, let's discuss the real science that determines the Arctic climate. Here is a short discussion of the discoveries I made while researching this issue. What I found was a very complex answer to my question about what really determines the Arctic climate. Although the answer is complex, if you look at the Arctic from a dynamic standpoint, you can clearly see that the hype is totally unfounded, and that there are several factors that determine the rate at which the Arctic melts or freezes.

One of the main factors is Solar activity, which seems to correspond well with Arctic Sea air temperature. This correlation is discussed in a paper by Harvard astrophysicist Willie Soon, "Varible Solar Irradiance as a Plausible Agent for Multidecadal Variations in the Arctic-Wide Surface Air Temperature Record of the Past 130 Years," published in *Geophyscial Research Letters* on Aug. 27, 2005. Dr. Soon showed that Solar activity was a large factor in the Arctic ice cycle, compared with the relatively tiny role that man-made CO_2 plays (**Figure** 2).

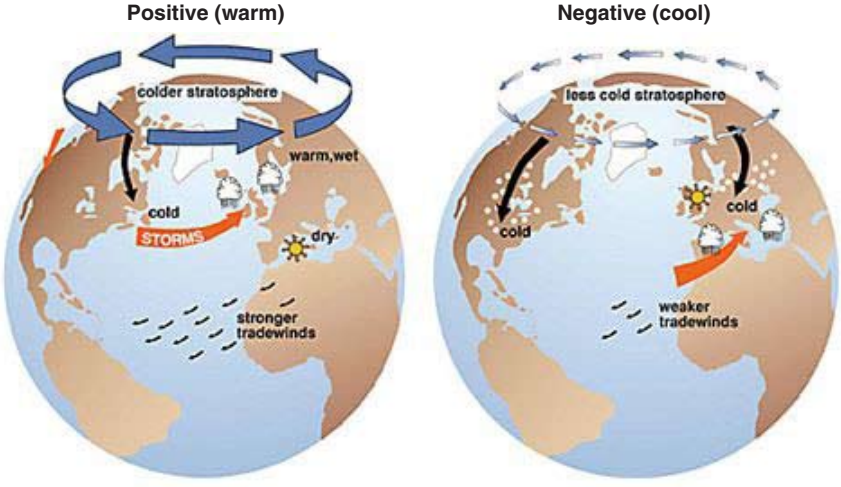
Another major factor in determining the Arctic Sea ice cycle is the Arctic Oscillation, a variation in weather patterns with a cycle of about one decade. The Arctic Oscillation exhibits a "negative phase" with relatively high pressure over the polar region and low pressure at mid-latitudes (about 45° North), and a "positive phase" in which the pattern is reversed. (**Figure 3**).

In the positive phase, higher pressure at mid-latitudes drives ocean storms farther north, and these changes in the circulation pattern bring wetter weather to Alaska, Scotland, and Scandinavia, while bringing drier conditions to the western United States and the Mediterranean.

In the "positive phase," of the Arctic Oscillation, frigid Winter air does not extend as far into the middle of North America as it would during the negative phase of the oscillation. This keeps much of the United States east of the Rocky

FIGURE 3

The Decadal Arctic Oscillation's Warm and Cool Phases



In the positive (warm) phase of the Arctic Oscillation, there is lower than normal atmospheric pressure over the Arctic and higher than normal atmospheric pressure over the central Atlantic, which drives warmer air farther north towards the Arctic, and also drives warmer water from the Atlantic Ocean into the Arctic Basin.

In the negative (cool) phase of the Arctic Oscillation, there is higher than normal atmospheric pressure over the Arctic, and lower than normal atmospheric pressure over the central Atlantic, which pushes colder air farther south. In the cooler periods, strong surface winds maintain a powerful clockwise gyre in the Arctic Basin, which keeps the warm water from the Atlantic at bay.

Source: J. Wallace, University of Washington.

Mountains warmer than normal, but leaves Greenland and Newfoundland colder than usual. Weather patterns in the negative phase are in general opposite to those of the positive phase, as illustrated below. Generally, the postive phase of the Arctic Oscillation explains the relatively mild Winters that parts of the United States have had over the past two years.

In a discussion with a British astrophysicist, I asked what the relationship is between Solar activity and the Arctic Oscillation. He said that with more research and study, Arctic researchers will find a direct relationship between the 11-year Solar cycle and the Arctic Oscillation, which seems, from the data, to cycle on a decadal pattern. With a larger data base than used at present, this would be borne out, he said.

Oscillation Cycles

Global oscillations act on a decadal and mulitdecadal cycle. The major oscillations, like the Arctic Oscillation, seem to act on a decadal cycle. Polar researcher Igor Polykov, of the International Arctic Research Center at the University of Alaska at Fairbanks, has found what he refers to as a low-frequency oscillation (LFO), which seems to act on a cycle of 30-80 years. This LFO has a similar pattern of positive or warming mode, and negative or cooling mode, but the LFO acts to control the flow of warm and more saline Atlantic water into the Arctic Basin (**Figure 4**).

When the LFO is in the positive or warming mode, it brings in saltier water from the Atlantic Ocean. This rising salt content in the Arctic Basin leads to smaller amounts of sea ice forming in the Winter. Then, in the Summer, when the ice melts, the warmer water causes what the climate alarmists call the largest sea ice melt in history.

When the LFO is in negative, or cooling mode, this oscillation slows the intake of the more saline water, and allows cooler water from the Pacific Ocean to enter the Arctic Basin. This oscillation switches between positive and negative over a period of 30-80 years. Dr. Polykov found this oscillation while he was compiling a temperature database for the Arctic Basin. He compared sea surface temperature and sea bottom pressure, and found that in the 1930-40 period, the Arctic was in a positive oscillation pattern, and then from 1950 to 1975, it was in a negative oscillation pattern.

Dr. Polykov warns that while this discovery of the 30- to 80-year oscillation is a breakthrough, still with better data and more research, scientists will be able to indentify it more specifically.

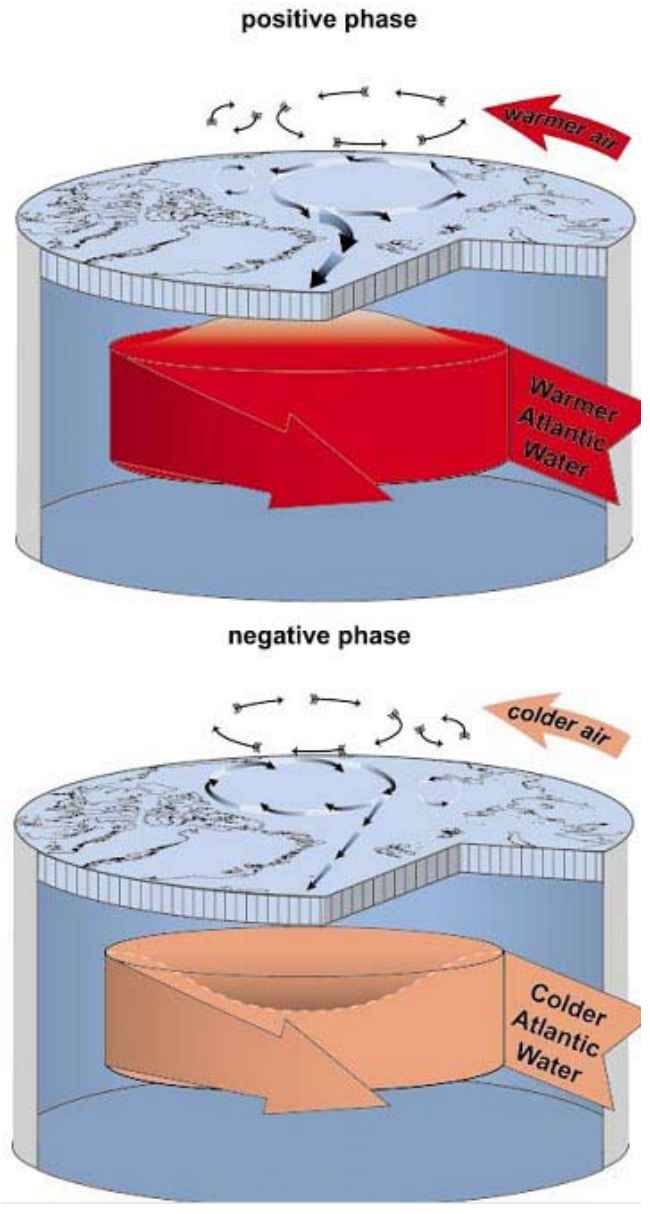
In an unpublished paper written for the International Polar Year 2007, Dr. Polykov outlined another exciting discovery of how the Sub-Polar Gyre is acting to determine the climate in the Arctic. The Sub-Polar Gyre is an ocean current that acts like a switch gear for a railroad. When there is an increase of pressure at the sea bottom, the Gyre switches and helps to bring in warmer water from the Atlantic. When sea bottom pressure decreases, the Gyre switches to bring in cooler water from the Pacific.

Dr. Polykov notes that this is breakthrough research, and there is still more work to be done to identify the time scale that this Gyre operates on. So with more research, more interesting questions come to light, such as: How does Solar activity help determine the switching of the Sub-Polar Gyre? Such questions and research cast significant doubts on Al Gore's and the IPCC's consenus that the science is settled.

The Arctic Sea ice melting and refreezing is like a grand symphony of several natural oscillations with decadal and multidecadal cycles.

Wind also plays a big role in this symphony. A few research papers have looked at the role of wind in this year's sea ice melt. On Oct. 7, 2007, NASA released a study saying that this record sea ice melt was caused in large part by the changing of Arctic wind patterns. As more research is done, it is

FIGURE 4
The Low-Frequency Arctic Oscillation (30- to 80-Year Cycle)



In the positive (warming) phase of the Low Frequency Oscillation, warmer water from the Atlantic Ocean enters the Arctic Basin and the air circulation pattern is counterclockwise, bringing warmer air into the Arctic. In the negative (cooling) phase, colder Atlantic Ocean water enters the Arctic Basin, and the air circulation pattern is clockwise, bringing colder air into the Arctic.

This oscillation was discovered by Igor Polykov of the International Arctic Research Center in Fairbanks, Alaska, while he was correlating Arctic-wide air temperatures and Arctic Ocean sea-level pressures. The Low-Frequency Oscillation has a periodicity of 30-80 years.

Source: Igor Polykov, 2004.

clear how small a role man-made CO_2 plays in Arctic climate. The NASA study showed that over the past two Winters, the Arctic ice had been moved to lower latitudes by the changing of the wind patterns to a more southerly direction. This change brought the sea ice pack into contact with warmer water from the Atlantic Ocean, causing a decrease in the amount of seasonal ice to form; over the past two years, this produced two record Arctic ice melts.

Climate alarmists like Al Gordo don't want you to see that other factors, working in concert with each other, are what determine the extent of sea ice melt and refreezing. Once you get a sense of the overall dynamics of the Arctic, it is silly to say that the large melts are caused by man-made CO_2.

Ignorance of History

The news media has also scared people with the idea that this record ice melt is different from any in the past, saying that this year's melt has opened the Northwest Passage "for the first time in human record." This is not true. The Northwest Passage has been open several times in the recent past.

• In 1906, Norwegian explorer Ronald Amundsen and six crew members sailed the Northwest Passage from east to west, becoming the first to completely traverse the passage.

• In 1940, and again in 1944, a group of Canadians, led by Royal Canadian Mounted Police officer Henry Larsen, traversed the Northwest Passage.

Library of Canada, 1908.

Ronald Amundsen, who traversed the Northwest Passage in 1906.

These three expeditions occurred in periods when the Arctic was warmer than today. These warm periods were caused by natural cycles and occurred before the so-called increase in man-made CO_2.

When one looks at the climate, there has to be a sense of the history of science and exploration. To this end, one must look at all available sources of data. When looking at the Arctic, researchers must consult old ship logs and logbooks for companies like the Hudson Bay Company, which give a valuable picture of the past. The Hudson Bay Company's logs document that over the 19th Century, part of the Northwest Passage was navigable, if ships stayed below certain latitudes. These data fill out the picture for the period before 1979, which is the point when satellites were launched to monitor the sea surface temperature, and pressure at sea surface and sea bottom.

This year's Arctic Sea ice melt was the largest since the start of the use of satellites to monitor the Arctic. But with all of the hype from NOAA and the international media, you read almost nowhere about the near-record *refreezing* that is taking

FIGURE 5

Amundsen's 1906 Northwest Passage Route

Norwegian explorer Ronald Amundsen and his crew became the first to transit the fabled Northwest Passage in 1906, taking an east to west route. This expedition, and two later expeditions in the 1940s, all occurred when the Arctic was warmer than today, in some cases by 2-3°C. The global warming fearmongers ignore these historical facts.

Source: Jan Reimers, www.Franheim.com

place right now. This refreezing, which is occurring about two weeks earlier than that of previous years, is noted in a very small news short on the National Snow and Ice Data Center webpage. It is easy to miss.

To put the melt in perspective: The average Winter sea ice maximum is about 14 million square kilometers, and the average sea ice melt is 6-10 million square kilometers. This year's melt was 12 million square kilometers, which is well within the bounds of natural variablity, and happens all the time. As of Dec. 4, about 9 million square kilometers are frozen—meaning that water over 6 million square kilometers has refrozen since the low point in October.

Dr. Polykov gave a statement to the climate blog of Sen. James Inhofe (R-Okla.), asking how we can say that this is the largest sea ice minimum ever, when in the 1930s, the Arctic was warmer than today but we didn't have satellites to monitor it; if we had had the satellites then, we would have seen *less* ice than we saw this year.

But, climate extremists want to ignore history. For example, Eileen Claussen, president of the Pew Center for Climate Change, told a plenary session of the American Nuclear Society meeting in Washington, D.C. Nov. 12, that this year's sea ice melt was "the biggest ever." Since the Earth has gone through several ice ages and interglacials, when there was *no ice* at all in the Arctic, Claussen is indeed irresponsibly alarmist.

Meanwhile, in the middle of this press deluge of ice melt, there has been little or no mention of the fact that Antarctica this year has had *the largest snowfall and sea ice extent on record*. This record snowfall demonstrates the Earth's atmospheric circulation of moisture. With a record sea ice melt in the Arctic, some of that moisture is taken up by the Earth's atmospheric circulation and is deposited as snow in Antarctica.

To take another example of this, the much ballyhooed story that a rapid melt of the Greenland ice sheet would raise sea levels catastrophically, is just a scare. Geologists and oceanographers have emphasized that it would raise sea level a little, but most of the water would create the largest snowfall in Antarctica in history!

If today's population had not lost its sense of history, and had not developed an antipathy to science, it would not be possible for the global warming alarmists to scare people and policy-makers into backing anti-industrial policies that will lead to genocide. The best way to defeat Al Gore's global warming fascism, is for the youth of today to create a revival of the science of Leibniz, Kepler, and Gauss, and steer scientists away from their mind-deadening dependency on computer models.

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Daily Arctic Sea ice maps can be viewed at: http://www.ijis.iarc.uaf.edu/cgi-bin/seaice-monitor.cgi. At this site, the reader can create a slideshow of sea ice maps for the past year, and see the dramatic refreeze of the so-called largest Arctic Sea ice melt since the start of satellite monitoring.