

RECORD TYPE: FEDERAL (NOTES MAIL)

CREATOR: "Card, Robert" <Robert.Card@hq.doe.gov> ( "Card, Robert" <Robert.Card@hq.doe

CREATION DATE/TIME: 2-JUN-2003 07:53:16.00

SUBJECT:: FW: 20th Century Climate Not So Hot

TO: "James Mahoney (E-mail)" <James.R.Mahoney@noaa.gov> ( "James Mahoney (E-mail)" <J  
READ: UNKNOWN

TO: Phil Cooney ( CN=Phil Cooney/OU=CEQ/O=EOP@EOP [ CEQ ] )  
READ: UNKNOWN

TEXT:

I assume you all saw this but just in case.

-----Original Message-----

From: Richard Seibert [mailto:rseibert@annctr.org]  
Sent: Friday, May 30, 2003 10:59 AM  
Subject: 20th Century Climate Not So Hot

Harvard Shield  
Smithsonian Sunburst  
Harvard-Smithsonian Center for Astrophysics  
Press Release

[red bar] <<http://cfa-www.harvard.edu/>> [CfA Home]  
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Release No.: 03-10  
For Release: March 31, 2003

20th Century Climate Not So Hot

Cambridge, MA - A review of more than 200 climate studies led by researchers at the Harvard-Smithsonian Center for Astrophysics has determined that the 20th century is neither the warmest century nor the century with the most extreme weather of the past 1000 years. The review also confirmed that the Medieval Warm Period of 800 to 1300 A.D. and the Little Ice Age of 1300 to 1900 A.D. were worldwide phenomena not limited to the European and North American continents. While 20th century temperatures are much higher than in the Little Ice Age period, many parts of the world show the medieval warmth to be greater than that of the 20th century. Smithsonian astronomers Willie Soon and Sallie Baliunas, with co-authors Craig Idso and Sherwood Idso (Center for the Study of Carbon Dioxide and Global Change) and David Legates (Center for Climatic Research, University of Delaware), compiled and examined results from more than 240 research papers published by thousands of researchers over the past four decades. Their report, covering a multitude of geophysical and biological climate indicators, provides a detailed look at climate changes that occurred in different regions around the world over the last 1000 years. "Many true research advances in reconstructing ancient climates have occurred over the past two decades," Soon says, "so we felt it was time to

pull together a large sample of recent studies from the last 5-10 years and look for patterns of variability and change. In fact, clear patterns did emerge showing that regions worldwide experienced the highs of the Medieval Warm Period and lows of the Little Ice Age, and that 20th century temperatures are generally cooler than during the medieval warmth." Soon and his colleagues concluded that the 20th century is neither the warmest century over the last 1000 years, nor is it the most extreme. Their findings about the pattern of historical climate variations will help make computer climate models simulate both natural and man-made changes more accurately, and lead to better climate forecasts especially on local and regional levels. This is especially true in simulations on timescales ranging from several decades to a century.

#### Historical Cold, Warm Periods Verified

Studying climate change is challenging for a number of reasons, not the least of which is the bewildering variety of climate indicators - all sensitive to different climatic variables, and each operating on slightly overlapping yet distinct scales of space and time. For example, tree ring studies can yield yearly records of temperature and precipitation trends, while glacier ice cores record those variables over longer time scales of several decades to a century.

Soon, Baliunas and colleagues analyzed numerous climate indicators including: borehole data; cultural data; glacier advances or retreats; geomorphology; isotopic analysis from lake sediments or ice cores, tree or peat celluloses (carbohydrates), corals, stalagmite or biological fossils; net ice accumulation rate, including dust or chemical counts; lake fossils and sediments; river sediments; melt layers in ice cores; phenological (recurring natural phenomena in relation to climate) and paleontological fossils; pollen; seafloor sediments; luminescent analysis; tree ring growth, including either ring width or maximum late-wood density; and shifting tree line positions plus tree stumps in lakes, marshes and streams.

"Like forensic detectives, we assembled these series of clues in order to answer a specific question about local and regional climate change: Is there

evidence for notable climatic anomalies during particular time periods over the past 1000 years?" Soon says. "The cumulative evidence showed that such anomalies did exist."

The worldwide range of climate records confirmed two significant climate periods in the last thousand years, the Little Ice Age and the Medieval Warm

Period. The climatic notion of a Little Ice Age interval from 1300 to 1900 A.D. and a Medieval Warm Period from 800 to 1300 A.D. appears to be rather well-confirmed and wide-spread, despite some differences from one region to another as measured by other climatic variables like precipitation, drought cycles, or glacier advances and retreats.

"For a long time, researchers have possessed anecdotal evidence supporting the existence of these climate extremes," Baliunas says. "For example, the Vikings established colonies in Greenland at the beginning of the second millennium that died out several hundred years later when the climate turned

colder. And in England, vineyards had flourished during the medieval warmth.

Now, we have an accumulation of objective data to back up these cultural indicators."

The different indicators provided clear evidence for a warm period in the Middle Ages. Tree ring summer temperatures showed a warm interval from 950 A.D. to 1100 A.D. in the northern high latitude zones, which corresponds to the "Medieval Warm Period." Another database of tree growth from 14 different locations over 30-70 degrees north latitude showed a similar early

warm period. Many parts of the world show the medieval warmth to be greater than that of the 20th century.

The study - funded by NASA, the Air Force Office of Scientific Research, the National Oceanic and Atmospheric Administration, and the American Petroleum Institute - will be published in the Energy and Environment journal. A shorter paper by Soon and Baliunas appeared in the January 31, 2003 issue of the Climate Research journal.

NOTE TO EDITORS: Photos of key climate indicators are available online at <http://cfa-www.harvard.edu/press/pr0310image.html>

<<http://cfa-www.harvard.edu/press/pr0310image.html>>  
Headquartered in Cambridge, Massachusetts, the Harvard-Smithsonian Center for Astrophysics (CfA) is a joint collaboration between the Smithsonian Astrophysical Observatory and the Harvard College Observatory. CfA scientists organized into six research divisions study the origin, evolution, and ultimate fate of the universe.

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Last modified on Monday, 31-Mar-2003 15:18:29 EST  
Comments or Questions? Contact [pubaffairs@cfa.harvard.edu](mailto:pubaffairs@cfa.harvard.edu)  
<<mailto:pubaffairs@cfa.harvard.edu>>

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**Release No.: 03-10**

For Release: **March 31, 2003**

**20th Century Climate Not So Hot**

**Cambridge, MA**

- A review of more than 200 climate studies led by researchers at the **Harvard-Smithsonian Center for Astrophysics** has determined that the 20th century is neither the warmest century nor the century with the most extreme weather of the past 1000 years. The review also

confirmed that the Medieval Warm Period of 800 to 1300 A.D. and the Little Ice Age of 1300 to 1900 A.D. were worldwide phenomena not limited to the European and North American continents. While 20th century temperatures are much higher than in the Little Ice Age period, many parts of the world show the medieval warmth to be greater than that of the 20th century.

**Smithsonian** astronomers Willie Soon and Sallie Baliunas,

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"Many true research advances in reconstructing ancient climates have occurred over the past two decades," Soon says, "so we felt it was time to pull together a large sample of recent studies from the last 5-10 years and look for patterns of variability and change. In fact, clear patterns did emerge showing that regions worldwide experienced the highs of the Medieval Warm Period and lows of the Little Ice

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Soon and his colleagues concluded that the 20th century is neither the warmest century over the last 1000 years, nor is it the most



extreme. Their findings about the pattern of historical climate variations will help make computer climate models simulate both natural and man-made changes more accurately, and lead to better climate forecasts especially on local and regional levels. This is especially true in simulations on timescales ranging from several decades to a century. </span></font><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>

<p><u><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>Historical Cold, Warm Periods Verified</span></font></u></p>

<font color=black><span style='color:black'> </span></font><font color=black><span

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<p><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>&quot;Like forensic detectives, we assembled these series

of clues in order to answer a specific question about local and regional climate change: Is there evidence for notable climatic anomalies during particular time periods over the past 1000 years?&quot; Soon says. &quot;The

cumulative evidence showed that such anomalies did exist.&quot; </span></font>><font

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<p><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>The worldwide range of climate records confirmed two significant climate periods in the last thousand years, the Little Ice Age and the Medieval Warm Period. The climatic notion of a Little Ice Age interval from 1300 to 1900 A.D. and a Medieval Warm Period from 800 to 1300 A.D. appears to be rather well-confirmed and wide-spread, despite some differences from one region to another as measured by other climatic variables like precipitation, drought cycles, or glacier advances and retreats. </span></font><font color=black><span style='color:black;

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 <p><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>&quot;For a long time, researchers have possessed anecdotal evidence supporting the existence of these climate extremes,&quot;

Baliunas says. &quot;For example, the Vikings established colonies in <st1:place>Greenland</st1:place> at the beginning of the second millennium that died out several hundred years later when the climate turned colder. And in <st1:country-region><st1:place>England</st1:place></st1:country-region>, vineyards had flourished during the medieval warmth. Now, we have an accumulation of objective data to back up these cultural indicators.&quot; </span></font><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>  
 <p><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>The different indicators provided clear evidence for a warm period in the Middle Ages. Tree ring summer temperatures showed a warm interval from 950 A.D. to 1100 A.D. in the northern high latitude zones, which corresponds to the &quot;Medieval Warm Period.&quot; Another database of tree growth from 14 different locations over 30-70 degrees north latitude showed a similar early warm period. Many parts of the world show the medieval warmth to be greater than that of the 20th century. </span></font><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>  
 <p><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>The study - funded by NASA, the Air Force Office of Scientific Research, the National Oceanic and Atmospheric Administration, and the American Petroleum Institute - will be published in the Energy and Environment journal. A shorter paper by Soon and Baliunas appeared in the <st1:date Month="1" Day="31" Year="2003">January 31, 2003</st1:date> issue of the Climate Research journal. </span></font><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>  
 <p><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>NOTE TO EDITORS: Photos of key climate indicators are available online at <a href="http://cfa-www.harvard.edu/press/pr0310image.html">http://cfa-www.harvard.edu/press/pr0310image.html</a> </span></font><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>  
 <p><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>Headquartered in <st1:place><st1:City>Cambridge</st1:City>, <st1:State>Massachusetts</st1:State></st1:place>, the <st1:place><st1:PlaceName>Harvard-Smithsonian</st1:PlaceName> <st1:PlaceType>Center</st1:PlaceType></st1:place> for Astrophysics (CfA) is a joint collaboration between the Smithsonian Astrophysical Observatory and the Harvard College Observatory. CfA scientists organized into six research divisions study the origin, evolution, and ultimate fate of the universe. </span></font><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>

<p><u><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>For more information, contact</span></font></u><font color=black><span style='color:black'>: </span></font><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>

<p><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>David Aguilar, Director of Public Affairs<br><st1:place><st1:PlaceName>Harvard-Smithsonian</st1:PlaceName> <st1:PlaceType>Center</st1:PlaceType></st1:place> for Astrophysics<br>Phone: 617-495-7462 Fax: 617-495-7468 <br><a href="mailto:daguilar@cfa.harvard.edu">daguilar@cfa.harvard.edu</a> </span></font><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>

<p><font size=3 color=black face="Times New Roman"><span style='font-size: 12.0pt;color:black'>Christine Lafon<br>Public Affairs Specialist<br><st1:place><st1:PlaceName>Harvard-Smithsonian</st1:PlaceName> <st1:PlaceType>Center</st1:PlaceType></st1:place> for Astrophysics<br>Phone: 617-495-7463, Fax: 617-495-7016<br><a href="mailto:clafon@cfa.harvard.edu">clafon@cfa.harvard.edu</a> </span></font><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>

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<p class=MsoNormal align=center style='text-align:center'><i><font size=2 color=black face="Times New Roman"><span style='font-size:10.0pt;color:black;font-style:italic'>Last modified on Monday, 31-Mar-2003 <st1:time Hour="15" Minute="18">15:18:29 EST</st1:time> </span></font></i><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>

<p class=MsoNormal align=center style='text-align:center'><i><font size=2 color=black face="Times New Roman"><span style='font-size:10.0pt;color:black;font-style:italic'>Comments or Questions? Contact <a href="mailto:pubaffairs@cfa.harvard.edu">pubaffairs@cfa.harvard.edu</a> </span></font></i><font color=black><span style='color:black;mso-color-alt:windowtext'><o:p></o:p></span></font></p>

</div>

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===== END ATTACHMENT 1 =====

===== ATTACHMENT 2 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

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===== END ATTACHMENT 2 =====



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END ATTACHMENT 4

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ATTACHMENT 5

ATT CREATION TIME/DATE: 0 00:00:00.00

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END ATTACHMENT 5

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ATTACHMENT 6

ATT CREATION TIME/DATE: 0 00:00:00.00

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END ATTACHMENT 6

=====  
ATTACHMENT 7

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

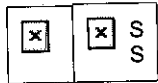
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END ATTACHMENT 7

I assume you all saw this but just in case.  
 <![if !supportEmptyParas]> <![endif]>  
 -----Original Message-----

**From:** Richard Seibert [mailto:rseibert@annctr.org]  
**Sent:** Friday, May 30, 2003 10:59 AM  
**Subject:** 20th Century Climate Not So Hot



Harvard-Smithsonian Center for Astrophysics

## Press Release

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**Release No.: 03-10**  
**For Release: March 31, 2003**

## 20th Century Climate Not So Hot

Cambridge, MA - A review of more than 200 climate studies led by researchers at the Harvard-Smithsonian Center for Astrophysics has determined that the 20th century is neither the warmest century nor the century with the most extreme weather of the past 1000 years. The review also confirmed that the Medieval Warm Period of 800 to 1300 A.D. and the Little Ice Age of 1300 to 1900 A.D. were worldwide phenomena not limited to the European and North American continents. While 20th century temperatures are much higher than in the Little Ice Age period, many parts of the world show the medieval warmth to be greater than that of the 20th century.

Smithsonian astronomers Willie Soon and Sallie Baliunas, with co-authors Craig Idso and Sherwood Idso (Center for the Study of Carbon Dioxide and Global Change) and David Legates (Center for Climatic Research, University of Delaware), compiled and examined results from more than 240 research papers published by thousands of researchers over the past four decades. Their report, covering a multitude of geophysical and biological climate indicators, provides a detailed look at climate changes that occurred in different regions around the world over the last 1000 years.

"Many true research advances in reconstructing ancient climates have occurred over the past two decades," Soon says, "so we felt it was time to pull together a large sample of recent studies from the last 5-10 years and look for patterns of variability and change. In fact, clear patterns did emerge showing that regions worldwide experienced the highs of the Medieval Warm Period and lows of the Little Ice Age, and that 20th century temperatures are generally cooler than during the medieval warmth."

Soon and his colleagues concluded that the 20th century is neither the warmest century over the last 1000 years, nor is it the most extreme. Their findings about the pattern of historical climate variations will help make computer climate models simulate both natural and man-made changes more accurately, and lead to better climate forecasts especially on local and regional levels. This is especially true in simulations on timescales ranging from several decades to a century.

**Historical Cold, Warm Periods Verified** < font color=black >

Studying climate change is challenging for a number of reasons, not the least of which is the bewildering variety of climate indicators - all sensitive to different climatic variables, and each operating on slightly overlapping yet distinct scales of space and time. For example, tree ring studies can yield yearly records of temperature and precipitation trends, while glacier ice cores record those variables over longer time scales of several decades to a century.

Soon, Baliunas and colleagues analyzed numerous climate indicators including: borehole data; cultural data; glacier advances or retreats; geomorphology; isotopic analysis from lake sediments or ice cores, tree or peat celluloses (carbohydrates), corals, stalagmite or biological fossils; net ice accumulation rate, including dust or chemical counts; lake fossils and sediments; river sediments; melt layers in ice cores; phenological (recurring natural phenomena in relation to climate) and paleontological fossils; pollen; seafloor sediments; luminescent analysis; tree ring growth, including either ring width or maximum late-wood density; and shifting tree line positions plus tree stumps in lakes, marshes and streams.

"Like forensic detectives, we assembled these series of clues in order to answer a specific question about local and regional climate change: Is there evidence for notable climatic anomalies during particular time periods over the past 1000 years?" Soon says. "The cumulative evidence showed that such anomalies did exist."

The worldwide range of climate records confirmed two significant climate periods in the last thousand years, the Little Ice Age and the Medieval Warm Period. The climatic notion of a Little Ice Age interval from 1300 to 1900 A.D. and a Medieval Warm Period from 800 to 1300 A.D. appears to be rather well-confirmed and widespread, despite some differences from one region to another as measured by other climatic variables like precipitation, drought cycles, or glacier advances and retreats.

"For a long time, researchers have possessed anecdotal evidence supporting the existence of these climate extremes," Baliunas says. "For example, the Vikings established colonies in Greenland at the beginning of the second millennium that died out several hundred years later when the climate turned colder. And in England, vineyards had flourished during the medieval warmth. Now, we have an accumulation of objective data to back up these cultural indicators."

The different indicators provided clear evidence for a warm period in the Middle Ages. Tree ring summer temperatures showed a warm interval from 950 A.D. to 1100 A.D. in the northern high latitude zones, which corresponds to the "Medieval Warm Period." Another database of tree growth from 14 different locations over 30-70 degrees north latitude showed a similar early warm period. Many parts of the world show the medieval warmth to be greater than that of the 20th century.

The study - funded by NASA, the Air Force Office of Scientific Research, the National Oceanic and Atmospheric Administration, and the American Petroleum Institute - will be published in the Energy and Environment journal. A shorter paper by Soon and Baliunas appeared in the January 31, 2003 issue of the Climate Research journal.

NOTE TO EDITORS: Photos of key climate indicators are available online at <http://cfa-www.harvard.edu/press/pr0310image.html>



Headquartered in Cambridge, Massachusetts, the Harvard-Smithsonian Center for Astrophysics (CfA) is a joint collaboration between the Smithsonian Astrophysical Observatory and the Harvard College Observatory. CfA scientists organized into six research divisions study the origin, evolution, and ultimate fate of the universe.

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[clafon@cfa.harvard.edu](mailto:clafon@cfa.harvard.edu)**

*Last modified on Monday, 31-Mar-2003 15:18:29 EST  
Comments or Questions? Contact [pubaffairs@cfa.harvard.edu](mailto:pubaffairs@cfa.harvard.edu)*