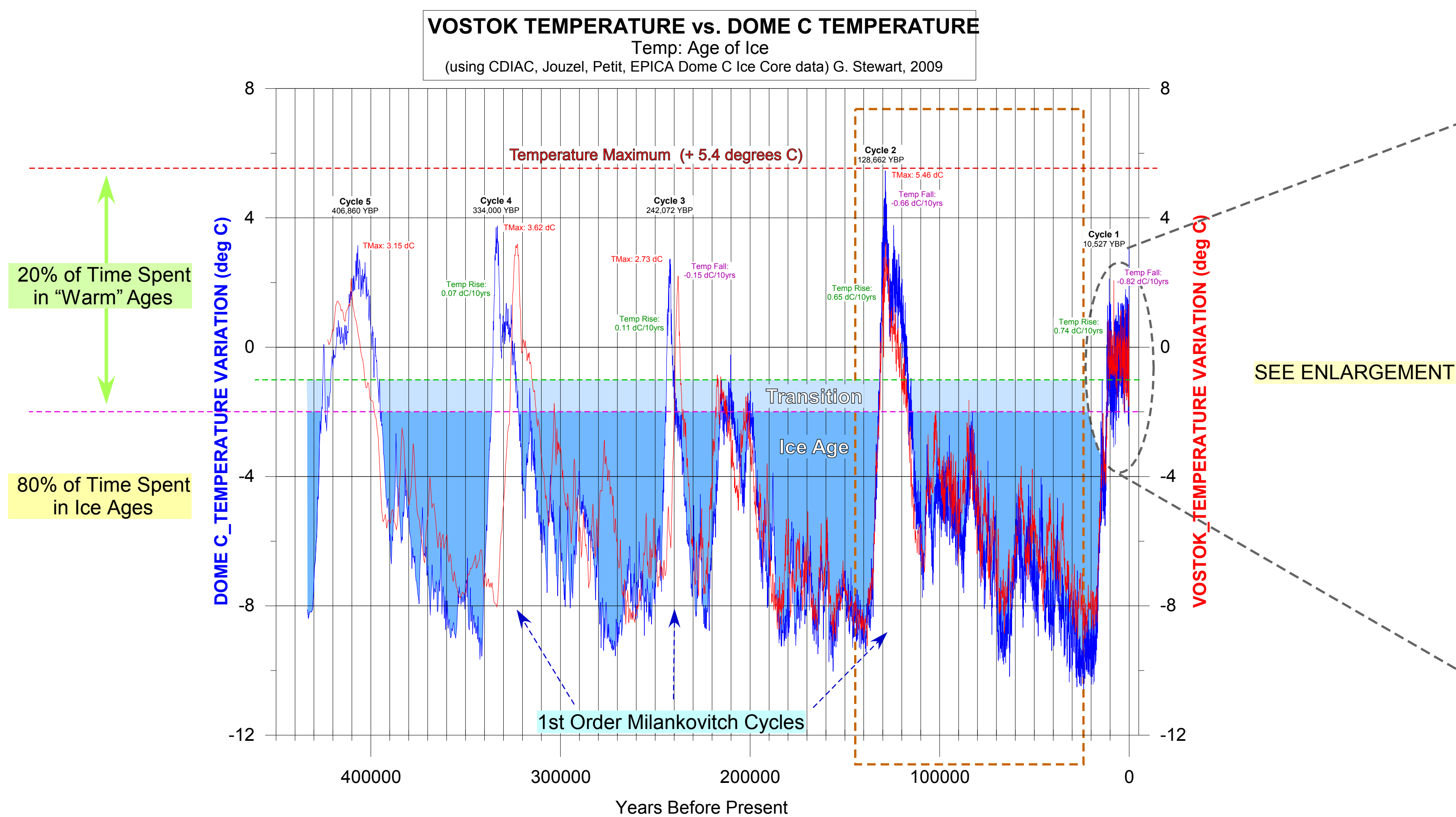


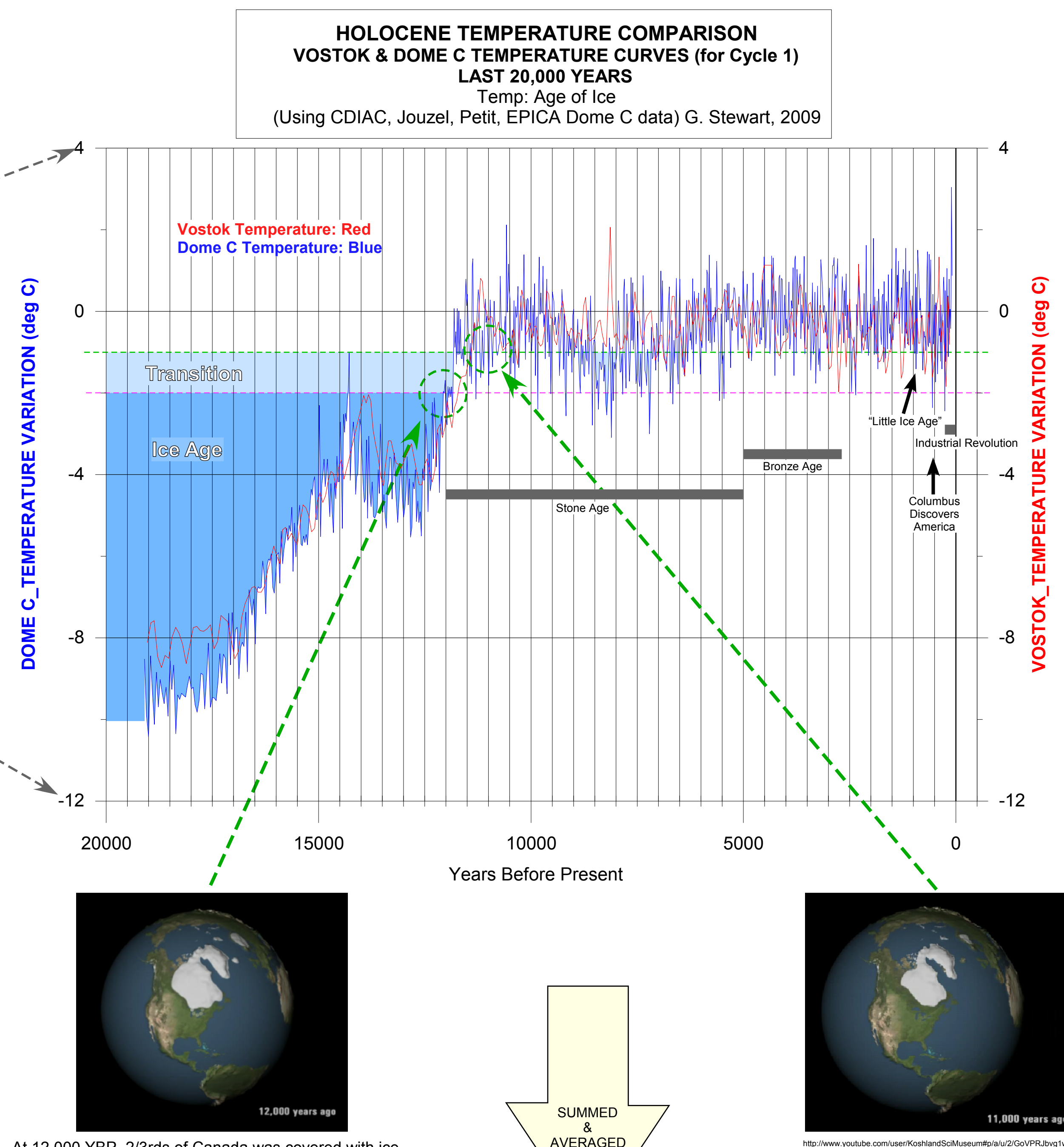
DOME C & VOSTOK ICE CORE COMPARISON

1. Dome C & Vostok Temperature Comparison (Last 400,000 Years)

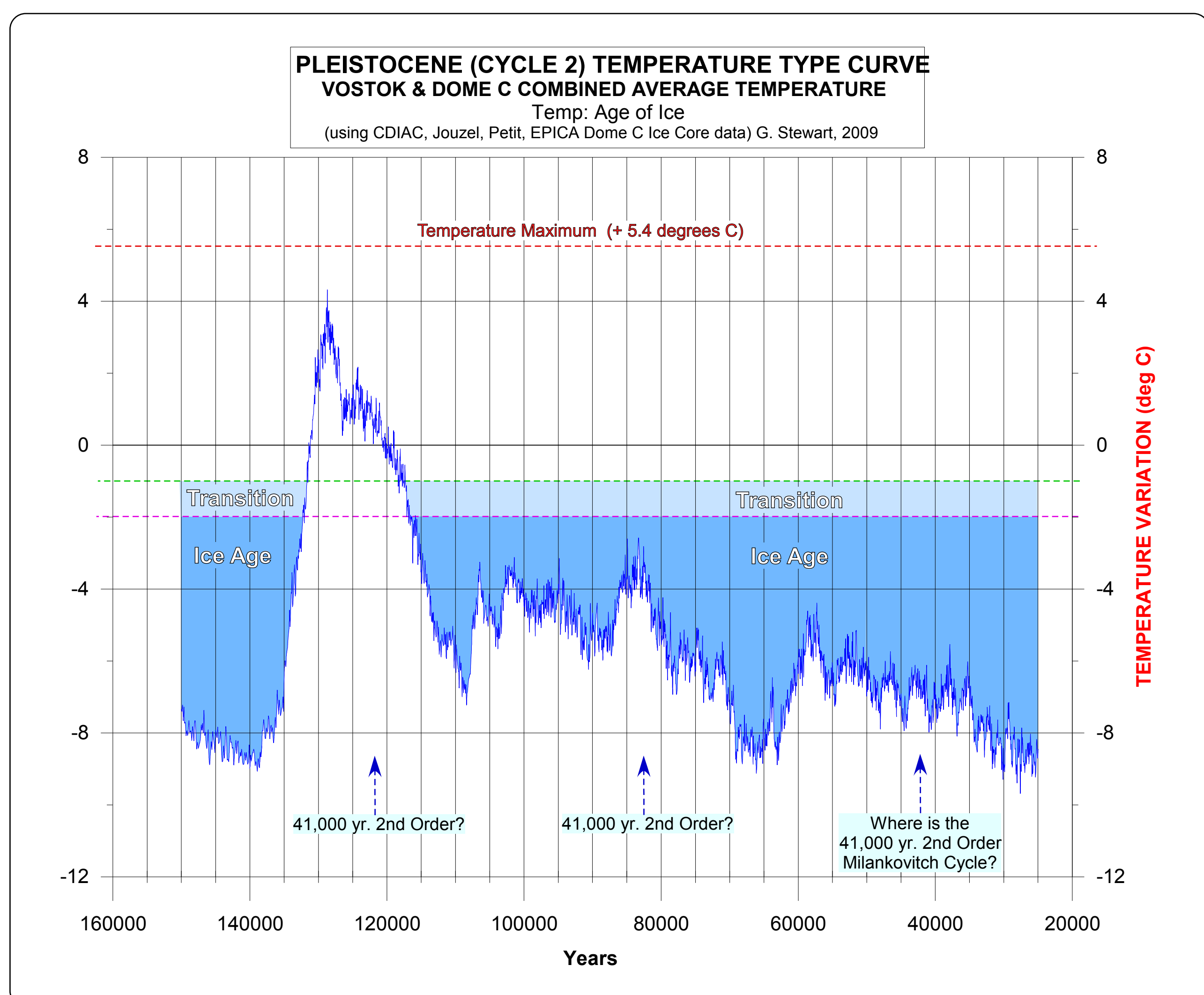


NOTE:
Assuming the four temperature maximums are related to the 1st Order 100,000 year Milankovitch cycles, CO2 had little effect in maintaining the high temperatures. As seen in Cycle 4, even though CO2 levels were at maximum 299 ppmv CO2 (Vostok), temperature did not continue to increase, but actually made a abrupt reversal. It therefore appears that the mechanical temperature rise & fall associated with 1st order Milankovitch cycles appear to overwhelm any warming effect associated with CO2, for CO2 levels below 299 ppmv;

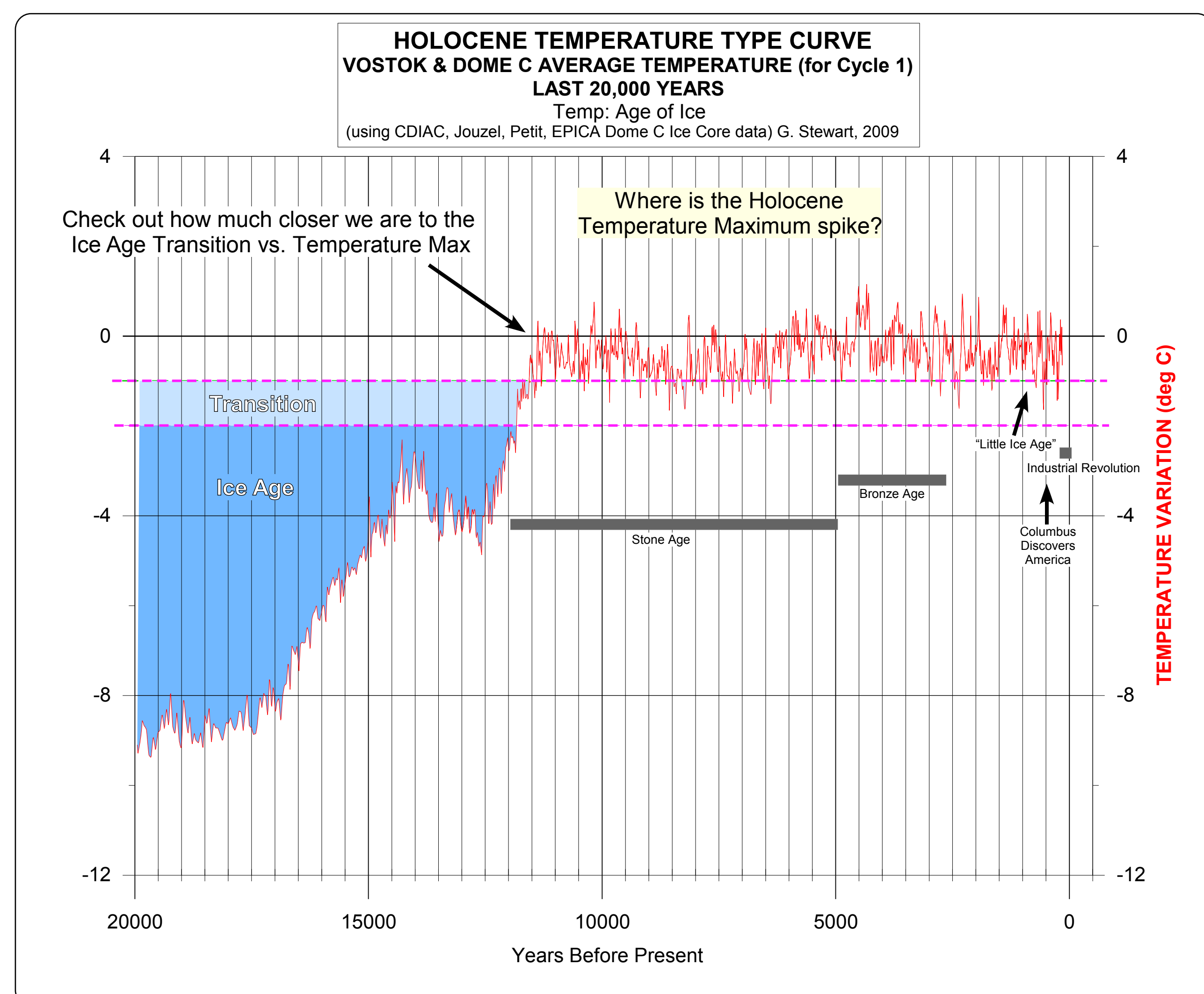
2. Dome C & Vostok Temperature Comparison (Last 20,000 Years)



3. Pleistocene and Holocene Type Curves



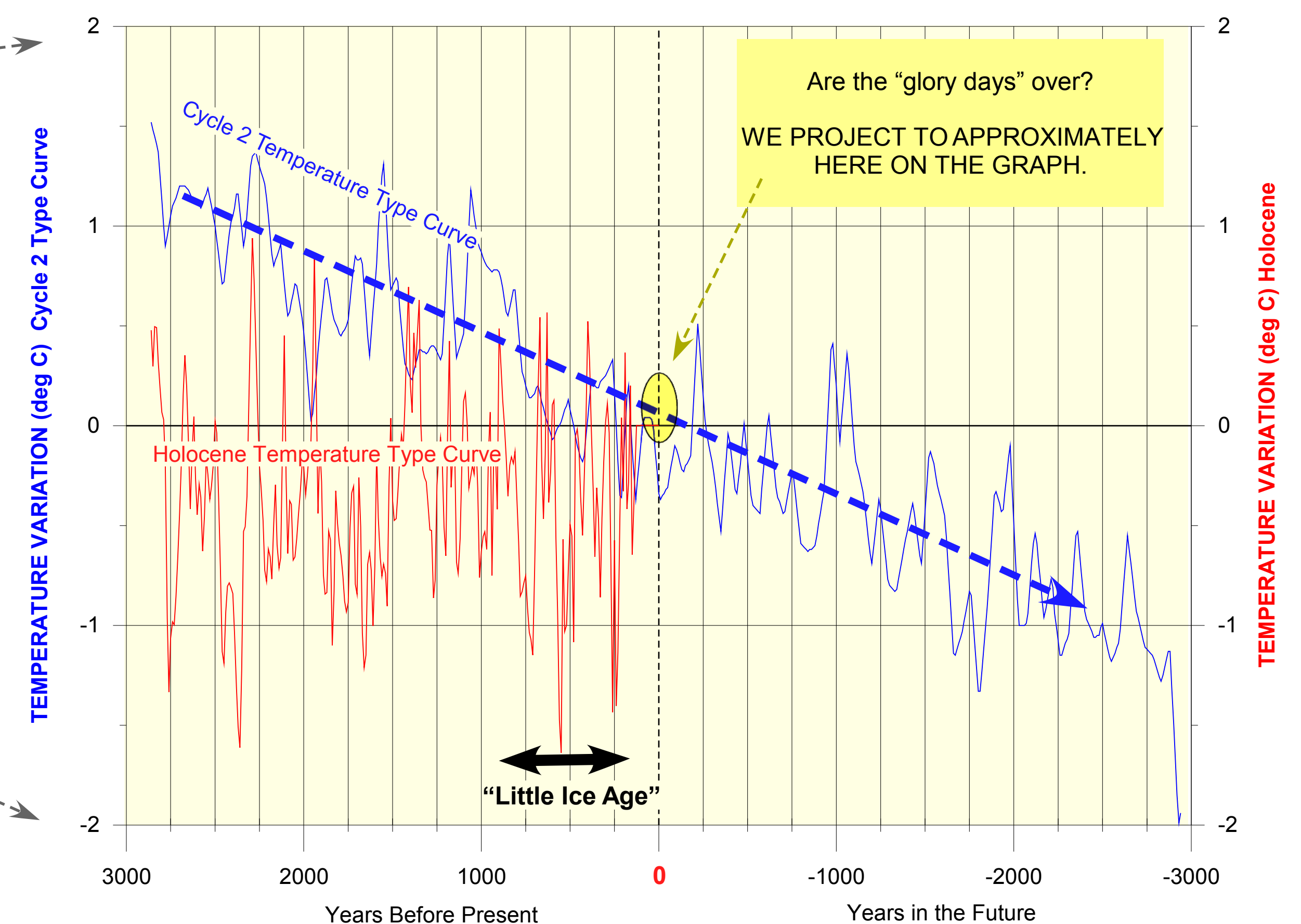
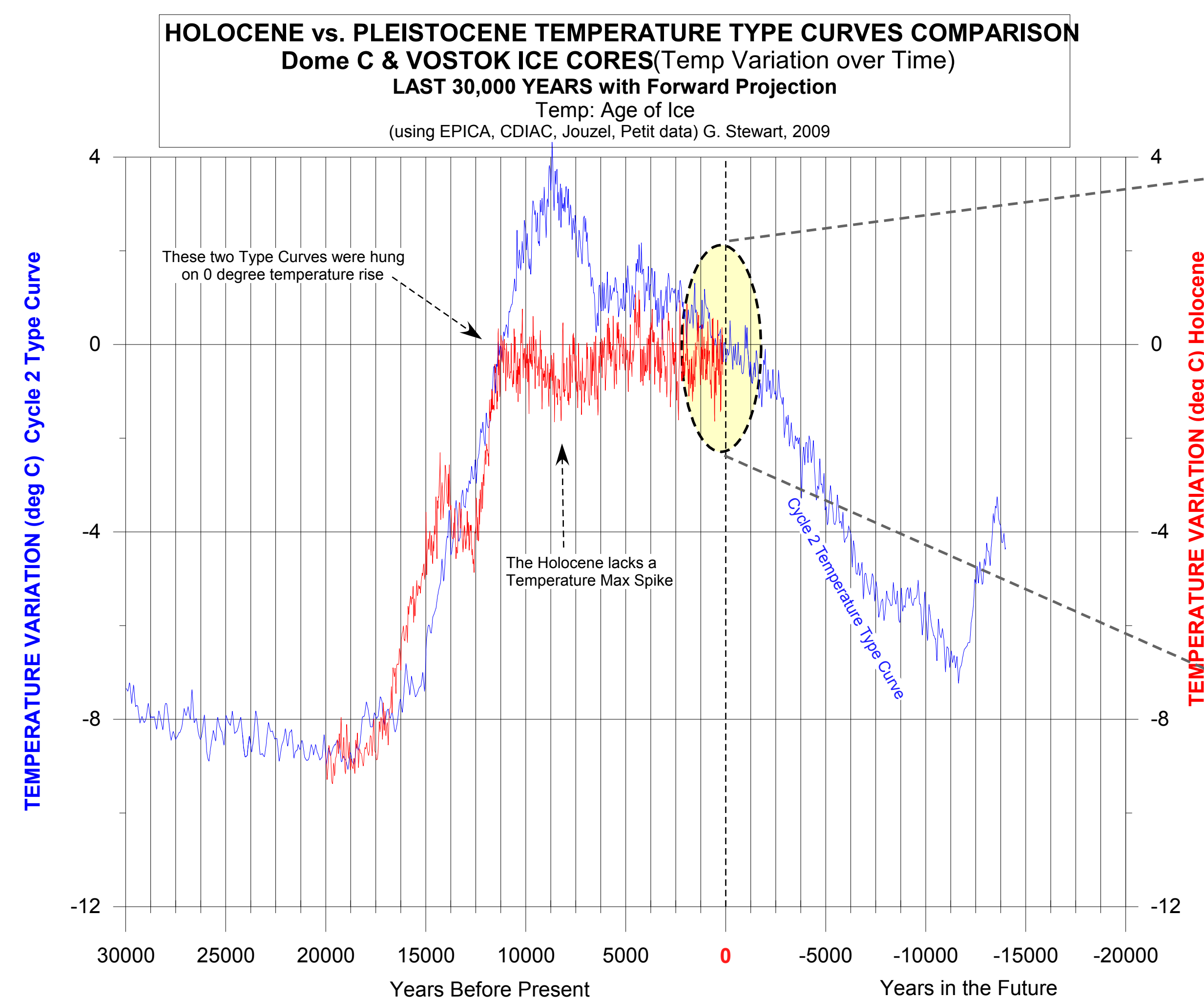
- The purpose of the Type Curve is to cancel "noise" and amplify true events;
- Cycle 2 (Pleistocene) Temperature data from both the Dome C and Vostok Cores were re-sampled on a 10-year frequency, summed and averaged to create this "Type Curve";
- Since Temperature sample frequency decreased with time within each core, and the 1st Order Milankovitch Cycles varied in duration for the five 1st Order Cycles within each core, stacking data from Cycles 2 through 5 within the same core to create a Type Curve resulted in stacking data "out of phase" with each other. Therefore the identical cycle temperature data from each core were stacked together to create individual Cycle Type Curves shown here;
- Original Temperature sample frequency for Cycle 2 in both cores ranged from 20 to 50 years



- The Holocene Type Curve constructed from the Vostok and Dome C cores lacks a Temperature Maximum spike;
- The Holocene Temperature has hovered within one degree C of the transition to an ice age;
- A small 1 degree C temperature dip threw part of the world into the "Little Ice Age";
- The Temperature Maximum from the Dome C prior cycles is a full 5 degrees C warmer than the Holocene average;
- Temperature Sample Frequency for Cycle 1 ranges from 10 to 20 years

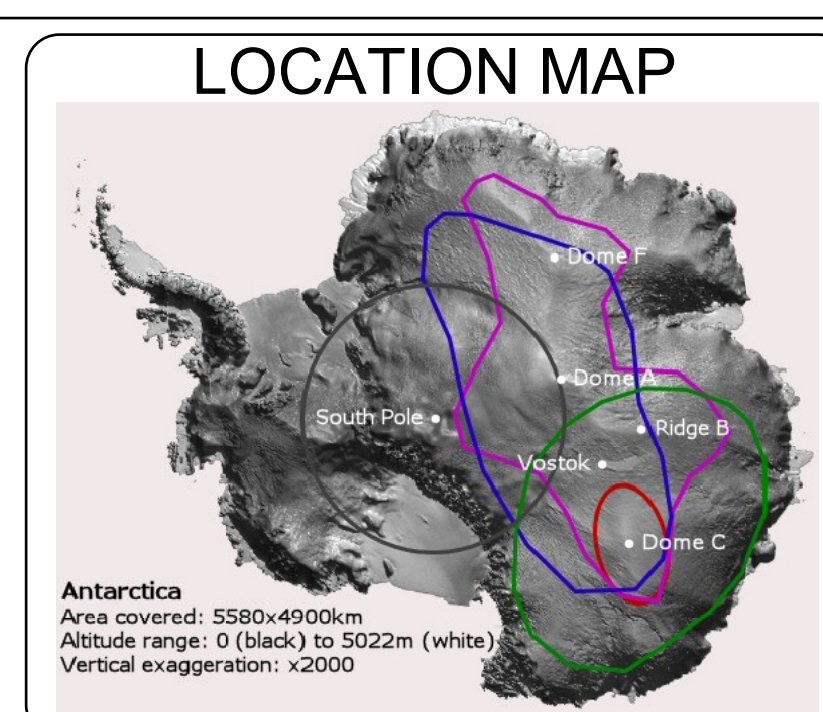
4. FUTURE PREDICTION AND CLIMATE MODELS

(ENLARGEMENT)



CONCLUSIONS:

1. The 10,000 years of the Holocene temperature "glory days" may be drawing to a close;
2. The 1st Order Milankovitch Cycle appears to be the dominate factor with global temperatures and overwhelms any CO2 warming effects (below 300 ppmv);
3. The 1st Order Milankovitch Cycle must be understood and included in any forward-looking climate prediction models;
4. In the event the world has already started falling into the next ice cycle, the rate of temperature rise measured since 1980 may be actually higher;
5. A 4 to 5 degree C temperature rise apparently does not create a catastrophic global warming, and apparently does not significantly release gas hydrates;
6. The rate of historic temperature rise (measured in the Dome C core) is more than triple the rate of temperature rise experienced during the last two decades;
7. Currently the Earth teeters on the brink of entering the next ice age and we must be extremely cautious to embrace geoengineering at this point.
8. Temperature either rises or falls. Those are your only two choices. If one does not like those choices, one needs to find another planet to live on.



Please cite the following work when using these data:
Jouzel, J., C. Lorius, J.R. Petit, C. Genthon, N.I. Barkov, V.M. Kotlyakov, and V.M. Petrov, 1987. Vostok ice core: a continuous isotopic temperature record over the last climatic cycle 150,000 years before present. *Nature* 329:676-679.
Jouzel, J., N.I. Barkov, J.M. Barnola, M. Bender, J. Chappellaz, C. Genthon, V.M. Kotlyakov, V. Lipenkov, C. Lorius, J.R. Petit, D. Raynaud, G. Steinhilber, C. Ritz, T. Steiner, M. Stievenard, F. Yeu, and P. Yeu, 1993. Extending the Vostok ice core record of deuterium to the penultimate glacial period. *Nature* 364:407-412.
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Petit, J.R., J. Jouzel, D. Raynaud, N.I. Barkov, J.M. Barnola, I. Banks, M. Bender, J. Chappellaz, M. Davis, G. Delany, M. Delmotte, V.M. Kotlyakov, M. Legrand, V.V. Lipenkov, C. Lorius, J. Pash, C. Ritz, E. Solomon, and M. Stievenard, 1999. Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica. *Nature* 399: 429-436.
Stewart, G.C., 2009. Denver Climate Group. Unpublished. http://cdac.cmi.gov/pubs/trends/2020/vostok_icecore.coe