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Subject: Public Hearing Comments

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Comments:

The ONLY Greenhouse Gas of any significance is water vapor. CO2 absorbs Long Wave Infrared and re-emits (scatters) a photon of Long Wave Infrared in one ten thousandth of a second. The Infrared “back scatter” has a minuscule effect on the heat balance of the planet. CO2 and Infrared “back scatter” has minuscule impact on the Earth’s heat balance. The only “greenhouse gas” of any significance is water vapor. However, liquid water in the oceans or aerosol droplets in clouds do absorb Ultraviolet radiation. There are multiple astrophysical and geomagnetic effects that drive variations in Ultraviolet radiation on Earth’s surface. Ozone depletion from CFCs was identified in 1974 (Molina). A photon on the Ultraviolet spectrum has 30x the Energy of an Infrared photon. Ultraviolet radiation warms the ocean waters, particularly the South Atlantic, due to the South Atlantic magnetic field Anomaly (SAA). The warmer ocean waters degas dissolved CO2. The oceans contain 39,000 gigatons of CO2. Warm waters in the tropics, especially the South Atlantic gyre, degas 90 gigatons each year. Human activity contributes 40 gigatons annually. Thus the planet is “greening up” as the tree line all around the Northern Hemisphere expands northward (satellite observations). The Dalton Minimum, with minimum solar activity, spanned from 1790 to approx. 1830. This was the very end of the Little Ice Age. Damp, cloudy and cool conditions persisted across the Northern Hemisphere. Over the intervening 200 years, the Earth’s magnetic field weakened approx. 10%, thus the solar wind and Van Allen radiation penetrates as deep as the D layer of the ionosphere (50 to 90 km up), producing Nitric Oxides (NO and NOx) which precipitate to the ozone layer (15 to 35 km up), thinning the ozone and allowing greater Ultraviolet radiation to warm the planet. Laschamps Excursion The Laschamps excursion was a temporary pole reversal. Occurring approximately 41,000 to 42,000 years ago, Earth's magnetic field strength plummeted to about 5% - 10% of its modern value, allowing the magnetic poles to completely flip to the opposite hemisphere. This reversal state lasted for a few hundred years before the poles flipped back to their original orientation. The event was originally discovered through analysis of basaltic lava flows in the Massif Central region of France (near the village of Laschamps). Environment With the magnetic field operating at just 5% of its normal strength, the planet was left entirely exposed to space weather. • Ozone Layer Collapse: Solar winds and cosmic rays stripped the stratosphere, destroying much of the ozone layer and bombarding the surface with extreme ultraviolet (UV) radiation. • Human Evolution Homo Sapiens departed Africa in waves to find shelter in the caves of Eurasia. Avoiding the intense Ultraviolet led to Eurasians with paler skin as a means to more efficiently produce Vitamin D with only limited UV exposure. • Apocalyptic Weather: The

sudden atmospheric changes triggered violent weather, massive electrical storms, and a surge in ice sheets and glaciers across the Northern Hemisphere. • Shifting Auroras: The northern and southern lights were no longer confined to the poles. Dazzling, erratic auroras warped across equatorial and tropical skies. • Megafauna Extinctions: The intense climate shifts and radiation are linked to the extinction of several large animal species, particularly in Australia. The Fate of Humans vs. Neanderthals The Laschamps excursion coincided perfectly with a major evolutionary turning point: the rapid decline and final disappearance of Neanderthals.