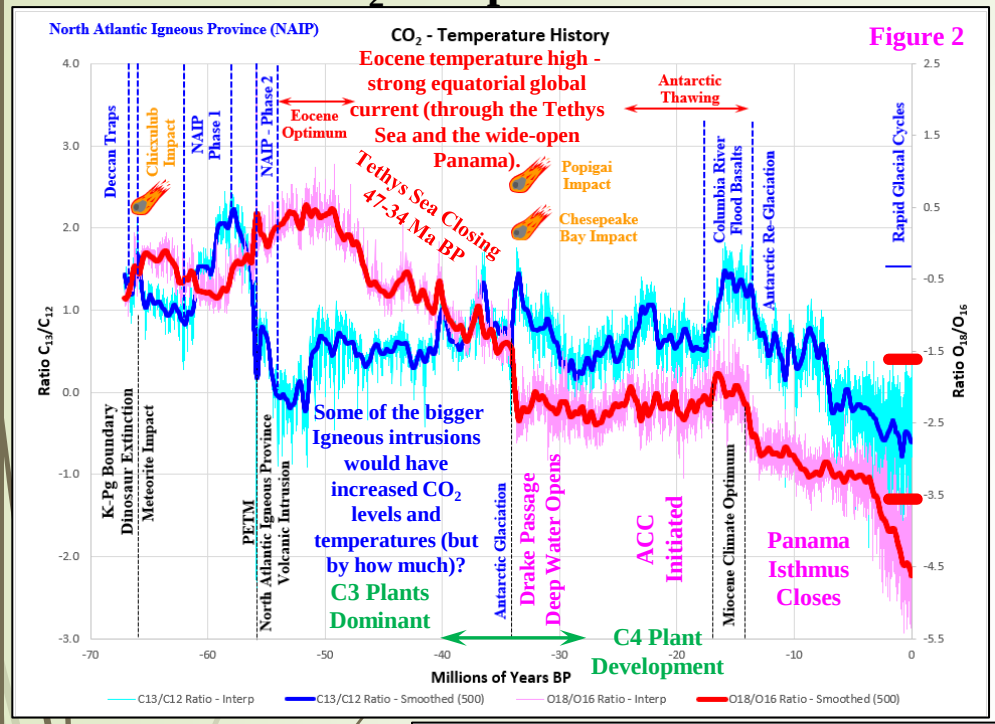
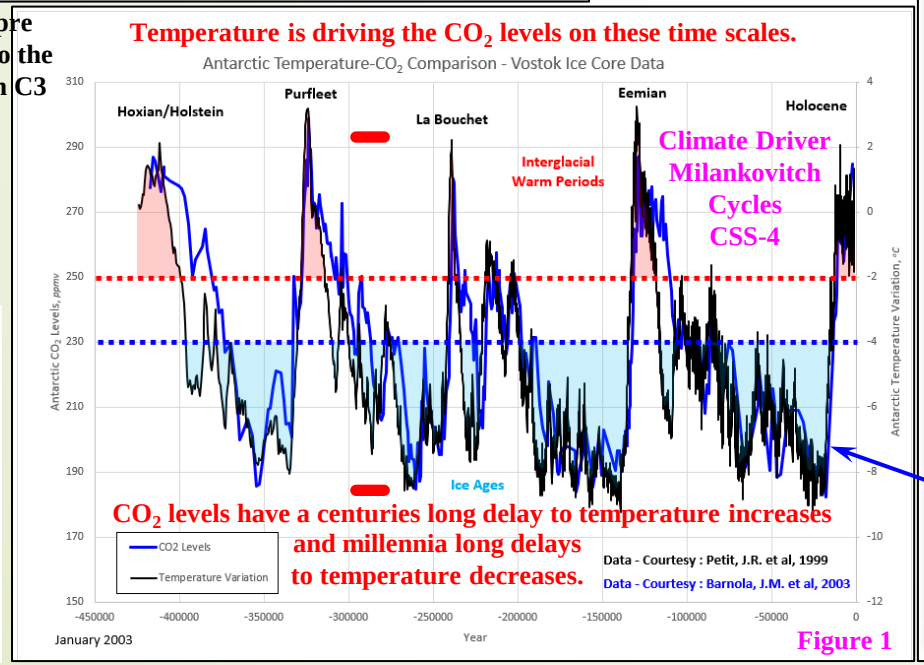
CO_2/Temperature – Cenozoic

This slide is a simplified look at the Cenozoic time period, focusing the discussion on the detailed oxygen and carbon isotope ratios (δO_{18} (O_{18}/O_{16}) and δC_{13} (C_{13}/C_{12})), respectively). A much more detailed look at the Cenozoic can be found in my recent CSS-10 post (A Ride Through The Cenozoic). The discussion starts at Figure 1 (bottom left). This is the temperature/CO_2 concentration data from the Vostok Ice cores over the last 420,000 years. These are the time scales that affect human civilizations. And on these time scales, Temperature is driving CO_2. When the global temperatures rise, CO_2 is released from the ocean (i.e.: atmospheric CO_2 rises) and when global temperatures fall, CO_2 is reabsorbed by the oceans (i.e.: atmospheric CO_2 declines). That general pattern is repeated throughout the Cenozoic (as shown in Figure 2). The detailed δO_{18} and δC_{13} fluctuations are based on the measurement of oxygen and carbon isotope variations in deep-sea benthic foraminifera. Those fluctuations were plotted against the ice core data in CSS-10, showing that the two proxies are consistent and the magnitudes are generally interchangeable. The reference bars from Figure 1 ( ) have been superimposed on Figures 2 and 3. Notice that all the fluctuations have magnitudes less than our current Pleistocene Ice Age (suggesting that very little of the Cenozoic temperature changes are due to CO_2.) The bigger temperature changes are due to major geological/celestial transformations.

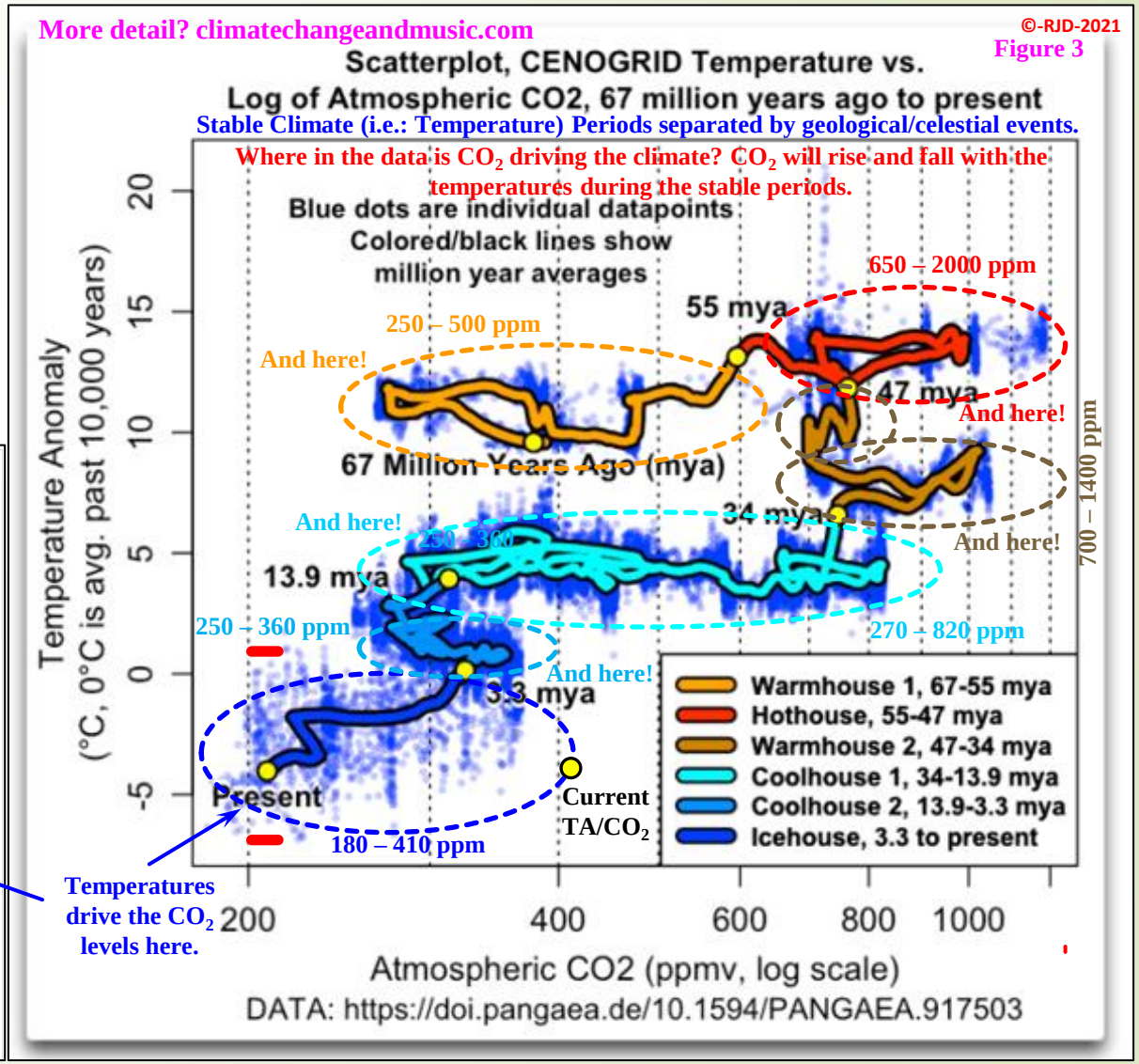


Note, the δC_{13} reacts differently pre and post 34 million years ago due to the carbon intake preferences between C3 and C4 plants (CSS-10).



Cenozoic CO_2/Temperature

The Temperature/CO_2 changes over the Cenozoic show that CO_2 is indeed a FECKLESS GreenHouse Gas (one more example for CSS-7). The dominant CO_2 declines shown in CSS-10, are related to CO_2 sequestration and have little affect on the temperatures as shown in Figure 3.



GSM – Grand Solar Minimum. The real "Climate Change" existential threat is right around the corner. Do the Research!