

Ice Core Reconstructions Cannot See Spikes

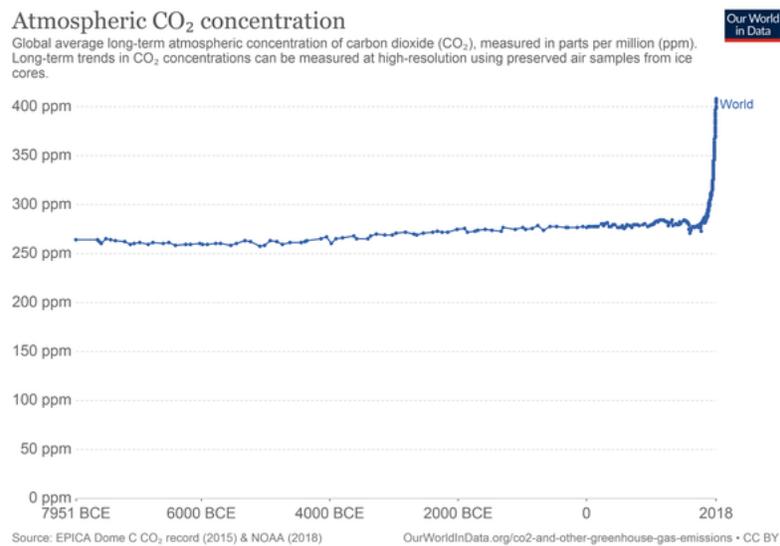
[So don't duct-tape it to recent precision measurements]

Or ... Slamming Slapshots with Slushy Ice

By windlord-sun April, 2020

<http://theearthintime.com>

Charts like this never cease to be reposted, reblogged, and re-valorized every place "Climate Change" is considered "Alarming."



We see the Mauna Loa Keeling Slope shooting up. It looks scary. But with that long, straight, low graph of CO₂ "attached" to it ... that is terrifying.

The Keeling Slope has been rising (not accelerating) steadily for 60 years. We worry. Some people do more than worry, they scream "Alarm!"

What if the Keeling Slope is nothing more than one segment of a natural, organic sine wave for CO₂ concentration – which normally oscillates between 250ppm and 350ppm, with outliers down to 170 and up to 420, throughout the Holocene? If we can't see the sine curve, because there is no measurement prior to 1960, the default assumption, per Occam, is just such an oscillating curve. That is nature.

But wait ... we are at 417ppm+ at Mauna Loa, right? My hypothetical still stands, because I'll add this element: what if the Keeling Slope is a segment on the natural sine wave, but human-release CO₂ is extending its duration and/or boosting it beyond the expected normal organic turn down. In other words, a **'kicker.'**

Still, we don't know how long Late Holocene CO2 sine waves last. We only have 60 years of evidence. What if the frequency is 160 years, up and down with an amplitude of 150ppm? Repeating: **we have never seen the CO2 sine wave as plotted from direct measurement.**

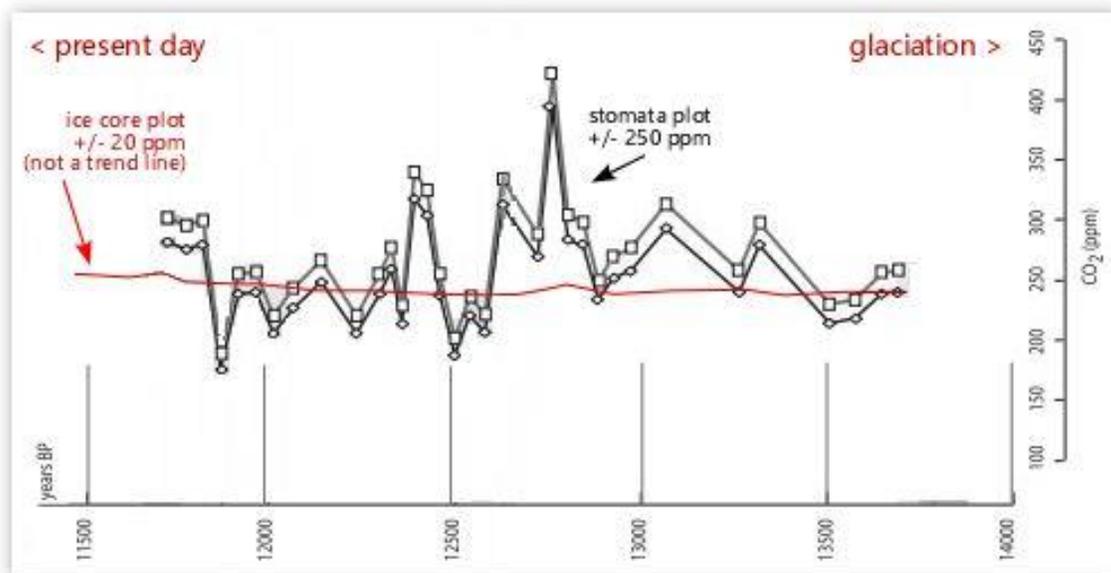
A 2012 study, by Margret Steinthorsdottir et al, looked into this issue.

Here is an overlay graph derived from that study that shows a 244ppm +/- 10ppm ice core CO2 reconstruction over 2200 years (it's the red line) in the Early Holocene. Those extolling the low level, the flatness, and the constancy of CO2 champion this worldview as fact. **Emphasis: 2200 years with only a swing of 20ppm – really?** Even through both the meltdown and the Younger Dryas churn?

I will not type what the other plot is. See for yourself. also linked here

<https://theearthintime.com/co2graph1.jpg>

Comparison of resolution of CO2 reconstructions for the early Holocene
Stomatal index vs Ice Core, 11,500-13,700 Years before present



Black line:
Häseldala Core 5 stomatal index
CO2 concentration range: 170-420

Red line:
Dome C by the EPICA project
CO2 concentration range: 234-254

source: Stomatal_proxy_record_of_CO2_concentrati20160426-10961-1tj6xf.pdf
Margret Steinthorsdottir et al, available at academia.edu/2949675 & other searchable links

overlay graph by windlord-sun <https://theearthintime.com>
per a disparate time-line source graph on the cited paper.

David Middleton raised this point in 2010 with extensive analysis, and defended attacks at Skeptical Science. He raised this analysis in 2019 at the following links:

<https://wattsupwiththat.com/2019/06/25/resolution-and-hockey-sticks-part-1/>

<https://wattsupwiththat.com/2019/07/02/resolution-and-hockey-sticks-part-deux-carbon-dioxide/>

I am not trying to deny human addition to the volume of CO₂. **My motive is a rational destruction of the totalizing represented by hockey-stick graphs.** You would think there would be a retreat from showing/extolling those CO₂ graphs, but no ... they persist in the culture.

Yes, there is a human element acknowledged. However, the underlying baseline is not a flat 244ppm or 280ppm +/- 10ppm for the entire Holocene, followed by a rocket to the moon, per Al Gore. Ms. Steinthorsdottir (I like that name) et. al. made a study with the [begin conjecture] intent [end conjecture] to simply compare ice with stomata, but the unintended consequence – once you overlay her two graphs and normalize the scale – is the disclosure of and rejection of the IceToKeeling Duct Tape fallacy.

<https://www.academia.edu/2949675>

Link to the 2012 Steinthorsdottir paper, with the following graph (note: differing scales)

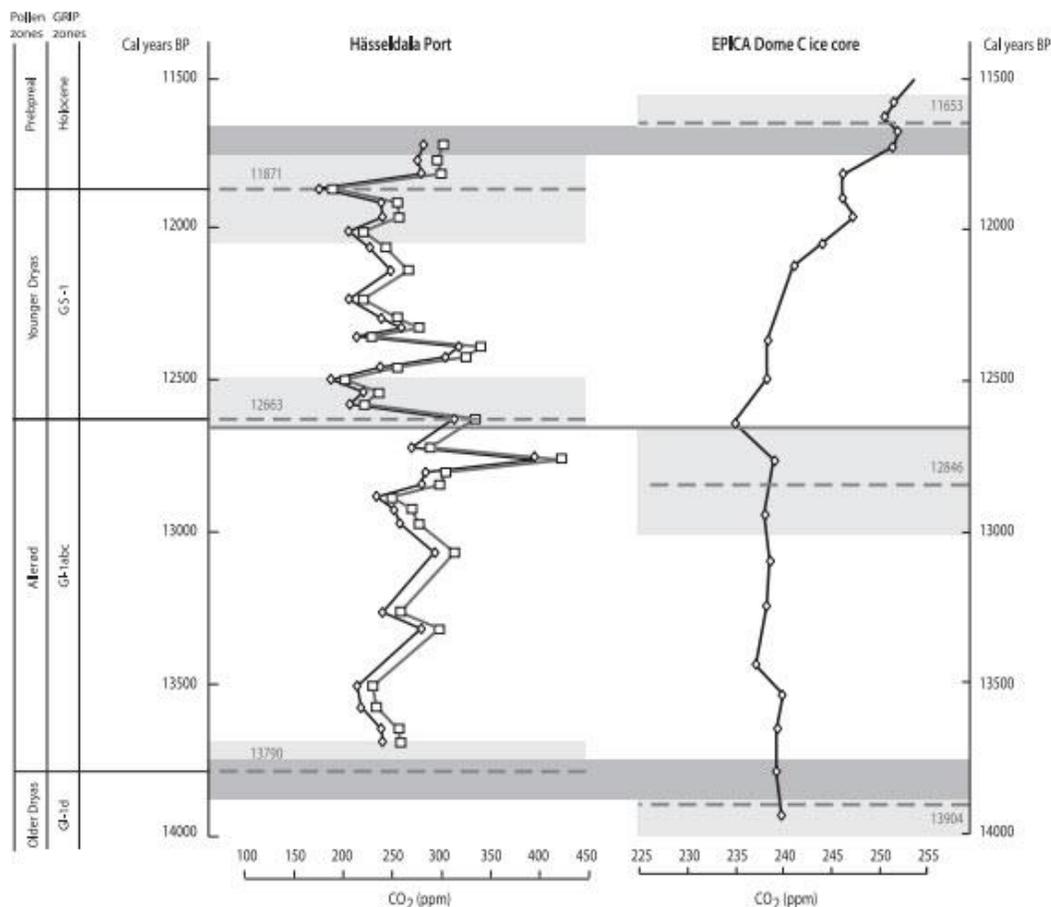


Fig. 8. Comparison with Antarctic ice core-based atmospheric CO₂ record. On the left hand side is the Hässelådalå Core 5 stomatal index based CO₂ concentration record, showing approximate minimum and maximum CO₂ concentrations (see Table 3 for errors). On the right hand side is an Antarctic CO₂ record reconstructed from air bubbles in the ice cores obtained at Dome C by the EPICA project (Monnin et al., 2001), synchronized with the Greenland ice core timescale (Lemieux-Dudon et al., 2010). The ages of the main climate change boundaries for each record are illustrated with dashed lines, surrounded by their error ranges in light grey (based on Walker et al., 2008 for the Greenland ice core chronology). The darker grey bars, which overlap the error ranges shown in light grey, illustrate that the ages for each of the boundaries are comparable within their error ranges. The records, although displaying some similarities, are clearly different. Firstly, the magnitude and range of CO₂ concentrations are much larger in the Hässelådalå Port record. Secondly, the stomatal-based record shows a more dynamic CO₂ development through time, in particular across the climate change boundaries, while the ice core-based record shows an almost linear, smoothed development.