



## Sophie's Planet #18: Chapter 26 (1986: Greenhouse Testimony to Congress)

04 August 2020

James Hansen

**T**hanks for comments on Chapter 25 (Paleoclimate). The moderate reframing of the way of looking at how orbital parameters affect climate seemed to be appreciated, but my summary of the impact of paleo data on our understanding of climate sensitivity was very weak.

The change in the five years after Charney's 1979 report was night to day. Charney concluded that there was a 50% change that  $2\times\text{CO}_2$  sensitivity was between 1.5 and 4.5°C. Five years after Charney, thanks to paleo data we knew: (1) climate sensitivity is in the mid to upper part of Charney's range with the usual 95% confidence, (2) there is a substantial delayed response, thus warming "in the pipeline," just because of ocean inertia and fast feedbacks, (3) over and above that, there are amplifying "slow" feedbacks, some of which may not be so slow.

[Revised Chapter 25](#), with many minor fixes and a completely new summary is available.

A draft of Chapter 26 (1986: Greenhouse Testimony to Congress), available for fact-checking [here](#), reveals the genius of Rafe Pomerance and Michael Oppenheimer.

You can sign up for our monthly global temperature updates [here](#).

You can sign up for my other Communications [here](#).

I opened a Twitter account @DrJamesEHansen, (<https://twitter.com/drjamesehansen>), but I am focusing mainly on finishing the book.

