

meteoLCD Weblog

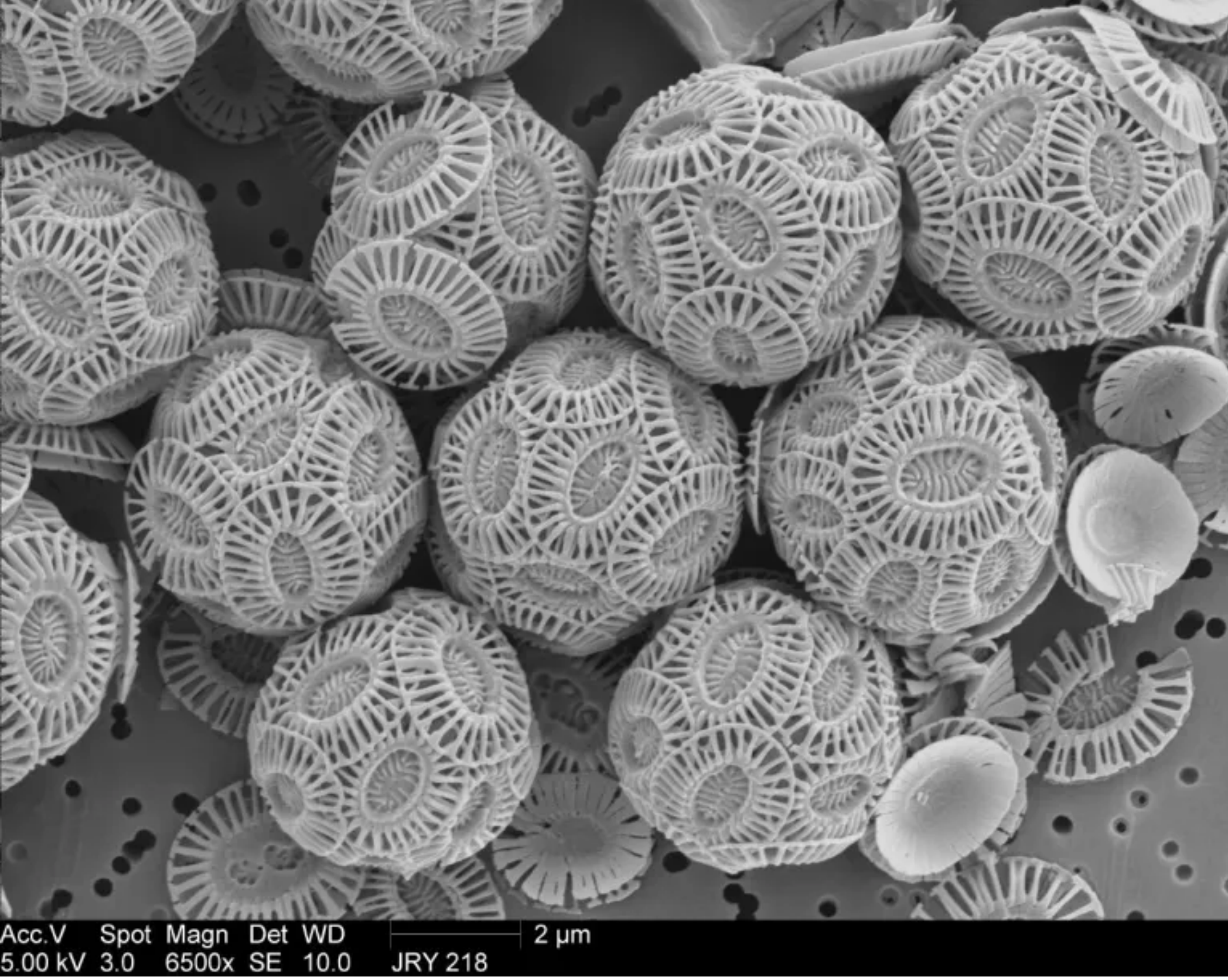
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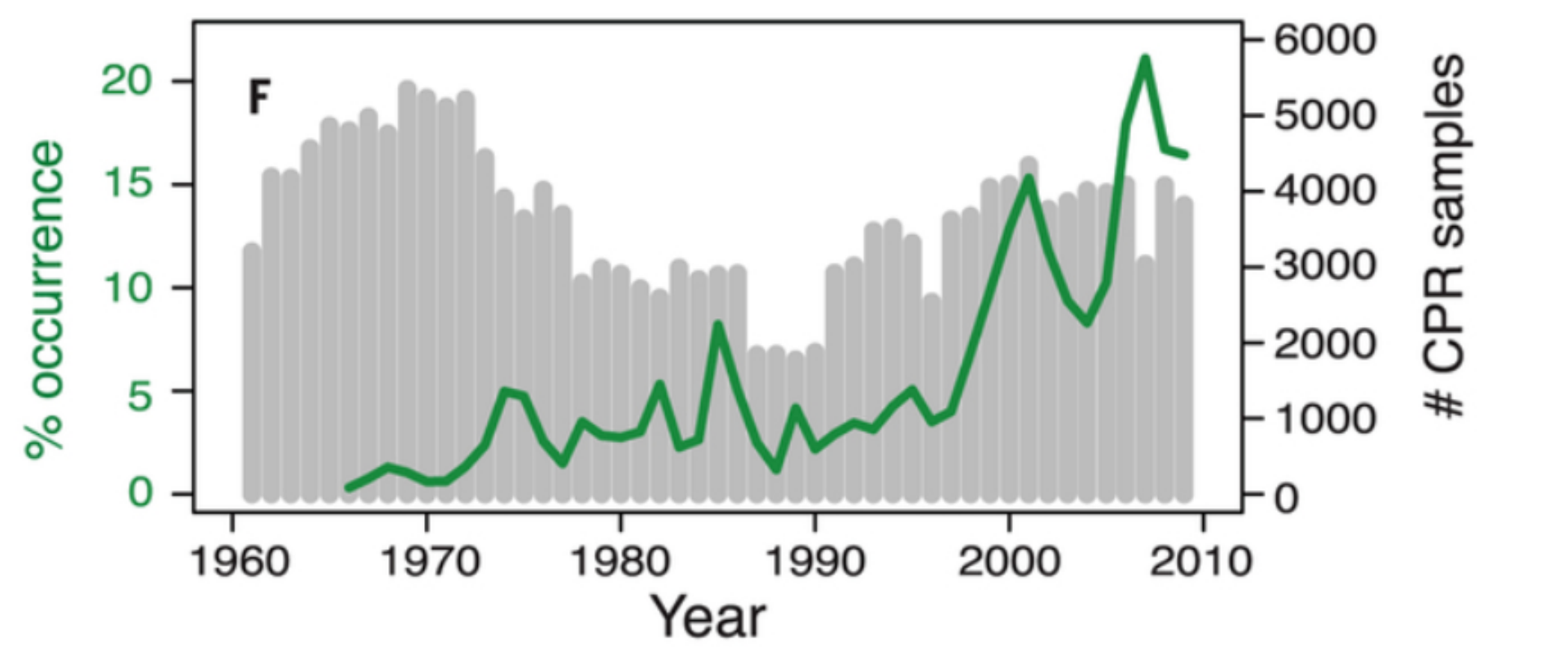
Higher CO2 boosts coccolithophores

The current “consensus” theory on the impacts of higher atmospheric CO2 is that current basic ocean pH levels (about 7.8 to 8.1 with ample variations) will be lowered by the dissolved CO2, and that the oceans “acidify” (a wrong appellation as the ocean waters still will remain basic). The bad results from the “acidification” would be problems for shell making creatures, as a more “acid” water would dissolve the calcium carbonate shells.

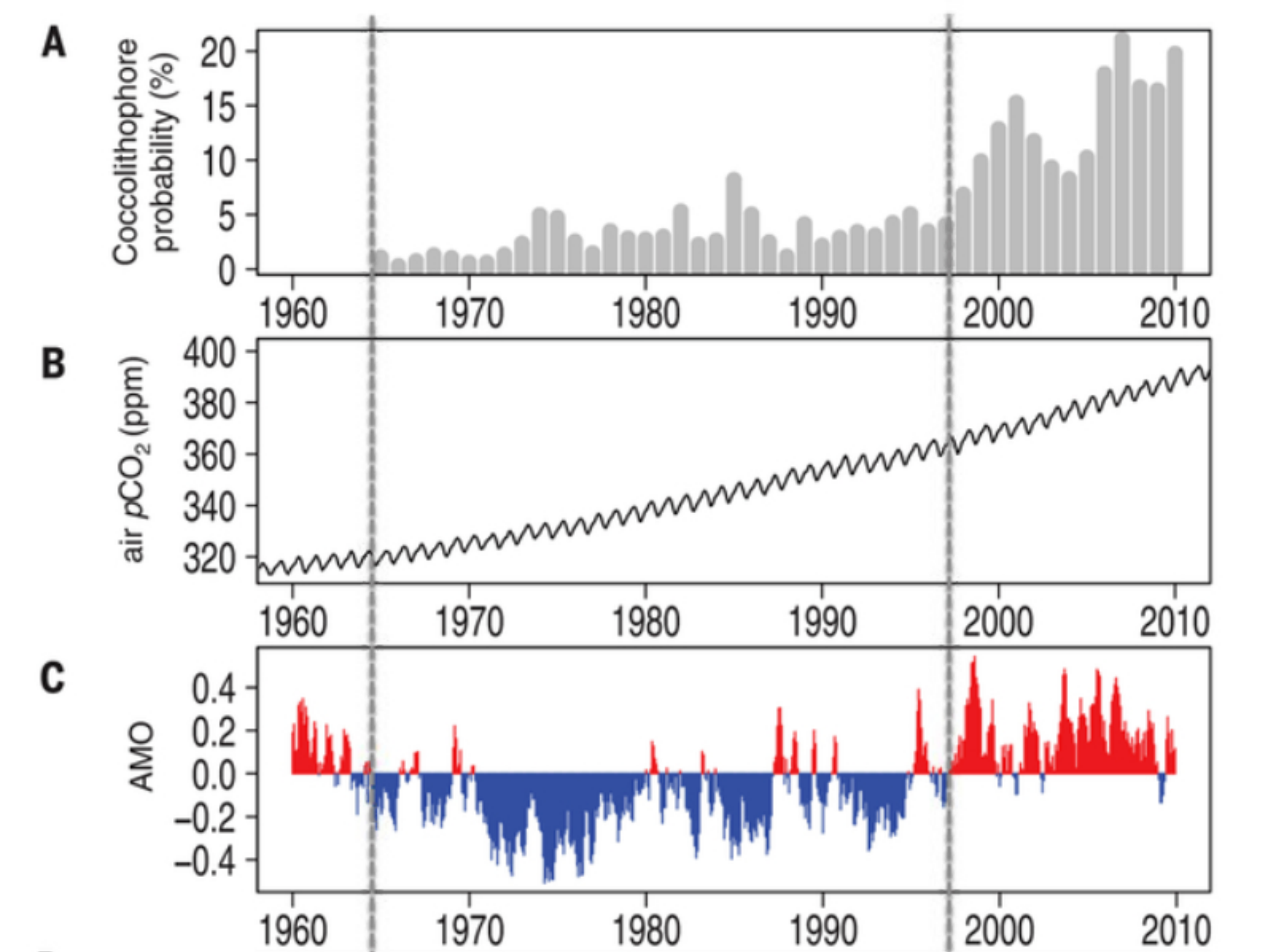
As so often in climate debates, these simplistic and popular alarmist theories do not survive serious scientific research. The latest issue of the journal SCIENCE Magazine (18 De. 2015, volume 350, issue 6218) has a research report by Sara Rivero-Calle from John F. Kennedy University and co-authors titled: “multidecadal increase in North Atlantic coccolithophores and the potential role of rising CO2”. Coccolithophores are the main calcium forming phytoplanktons, unicellular algae surrounded by calcium plates ([link](#) to picture)



According to the authors, coccolithophores are a major source for the oceans inorganic carbon, are helping to sink aggregates and thus increase the storage of atmospheric carbon. The study uses 45 years of data, where the method to collect the phytoplankton with silk sieves has not changed. Their results show that the coccolithophores profit from raising atmospheric CO2 levels. The next figures shows that the percentages of collected coccolithophores in the samples increases dramatically from about 2 to 20%:

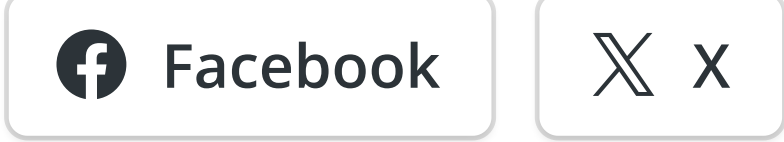


Their statistical analysis suggests that the causes of this increase are atmospheric CO2 levels and the AMO (Atlantic Multidecadal Oscillation):



The upper plot gives the above mentioned probabilities to find coccolithophores in the sample, the second the global atmospheric CO2 mixing ratio in ppmV and the lower plot the AMO index. They conclude that their North-Atlantic results may well represent a global trend. And that ***“contrary to the generalized assumption of negative effects of ocean acidification on calcifiers , coccolithophores may be capable of adapting to a high CO2 world”***.

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