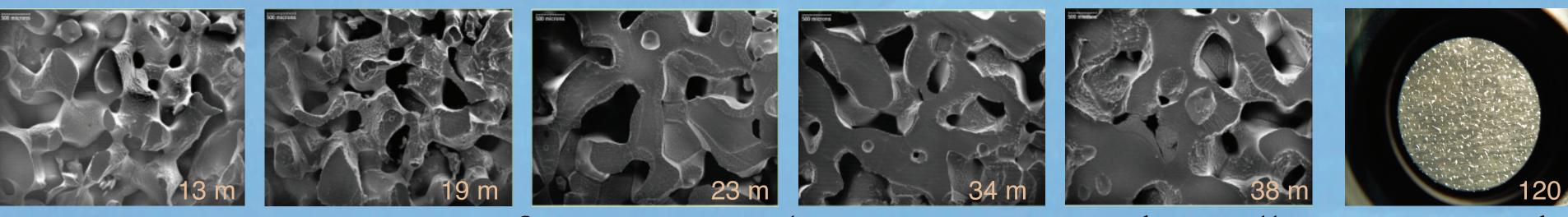
## In between snow lakes,

there are holes...

These holes get sealed off as snow turns into ice and forms



## air bubbles, trapping ancient air.



Scanning Electron Microscopy images from Ian Baker (Dartmouth College, NH) showing firn (old snow) and bubbles of air slowly closing with depth. At about 80m, all the air is trapped and air bubbles are visible to the naked eye.

Carbon díoxíde, CO<sub>2</sub>

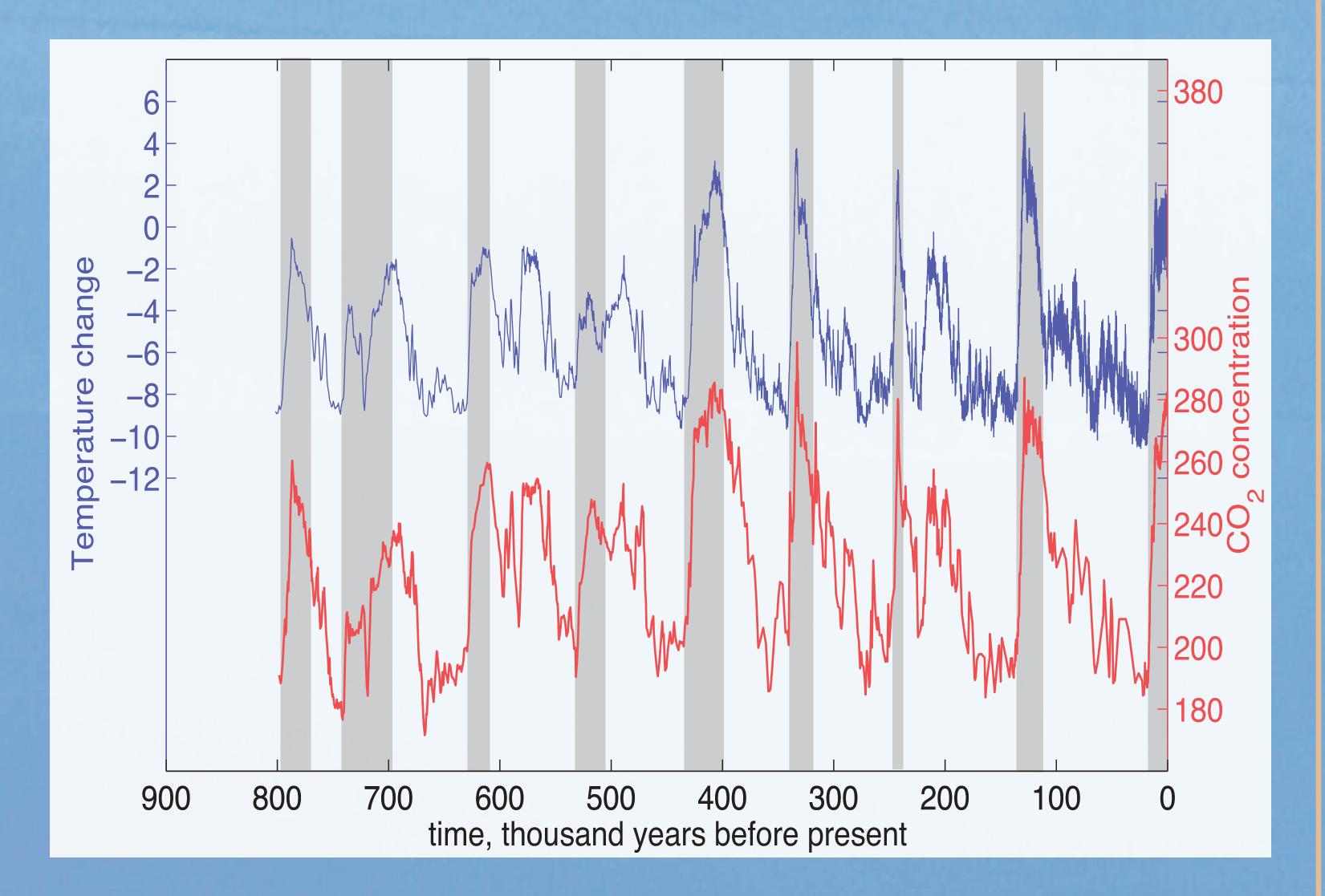


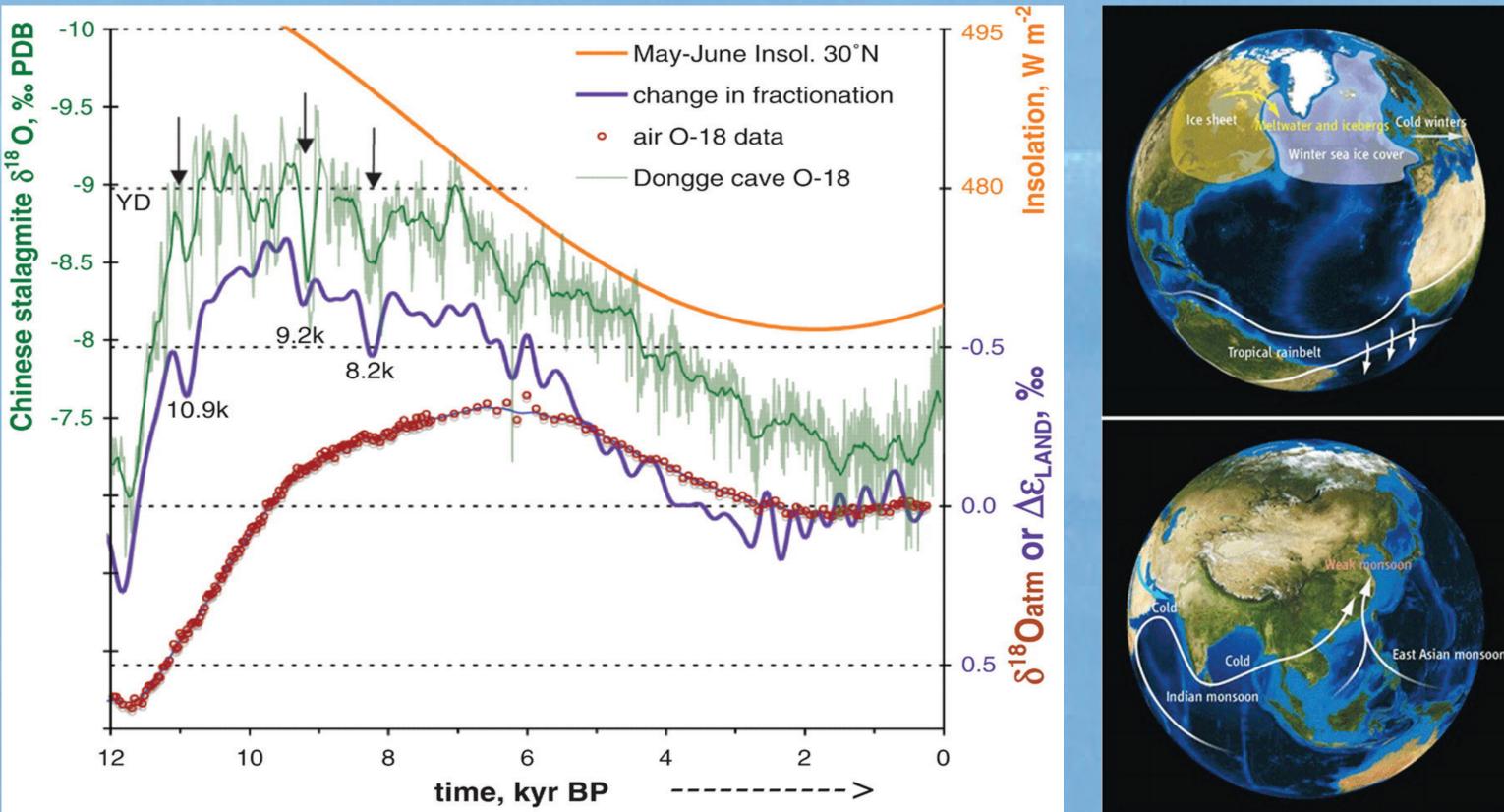
Antarctic Air tells us stories about the

is a greenhouse

Ice melting under vacuum. Once released, thecomposition of the old air is measured with a mass spectrometer. in far away China:

It traps heat from the Earth. This is a graph of the evolution of  $CO_2$  with temperature through time, from the EDC ice core in Antarctica. Today,  $CO_2$  concentration in the atmosphere is rising, due to the burning of oil and coal. The  $CO_2$  level is 380ppm. Can you spot it on the graph? Source: Luthl, Nature, 2008.





When the rain stops during monsoon season in China, the vegetation responds quickly, and it affects the isotopes of Oxygen in the air, mea-

sured as  $\delta^{18}O_{atm}$ . Ice cores from Antarctica record it in their air bubbles. A recent study from Siple Dome shows that the land fraction of  $\delta^{18}O_{atm}$  from the ice core (purple) records the same signal as  $\delta^{18}O$  from stalagmites in Chinese caves (green). Ice cores give us clues about changes in the climate, not just in Antarctica, but all over the world.

Source: Severinghaus et al. Science 2009



This poster was developed by Anaïs Orsi at Scripps Institution of Oceanography. Many thanks go to Julie Palais for funding WAIS Divide and supporting young researchers, to Ken Taylor for being committed to education and outreach, to Jeff Severinghaus for mentoring and encouragement, to RPSC and ICDS for supporting science.

The backdrop of this picture was taken by Anaïs Orsi in a backlit snow pit at WAIS Divide in 2008. You can see layers of more and less dense snow, from the winter and the summer, who will compact and turn into ice, ready for us to drill in 200 years!

