

First, the Antarctic ice is harvested by drilling a deep hole in the ice sheet, and then the ice core is separated into shorter segments. After the ice core segments are stored and transported to the lab bench, then the core segments are melted with a hot wire wrapped around the core inside a gas chamber. Gas is suctioned into a canister. Second, mass spectrometry is performed on the gas in the canister corresponding to the segment. Finally, the ratio of oxygen isotopes in the gas are calculated, which is correlated with average atmospheric temperature when air bubbles were trapped in the ice. Knowing that the deeper the air bubbles, the older the air trapped inside, the average air temperature versus time over the centuries can be graphed.