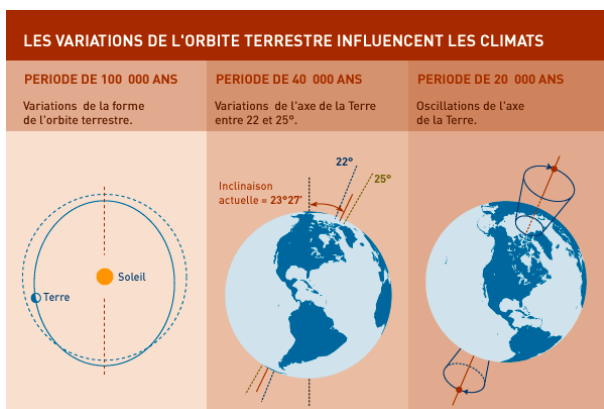


CLIMATE WARMING: THE NATURAL CYCLES

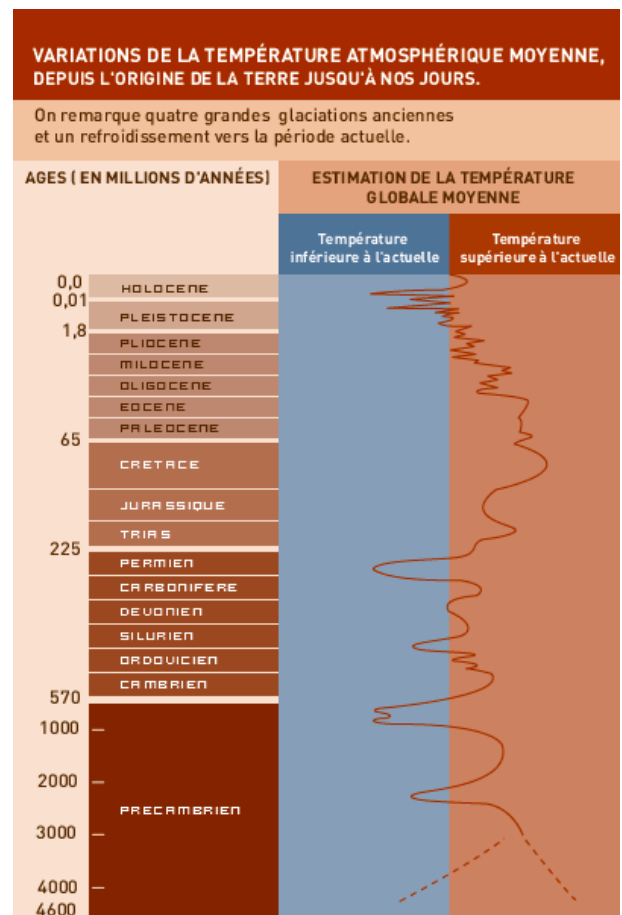
A CLIMATE THAT MIGHT SEEM STABLE...

The Earth's climate varies, and this is a natural phenomenon, but it changes so slowly that human beings with their short life-span do not notice it. The greatest variations can only be measured in terms of tens of millions of years, which is the time-scale of continental drift. Other changes, those due to fluctuations in the Earth's orbit, are measured in terms of tens of thousands of years, and the most rapid changes would require data over centuries or at least decades.



CLIMATE DURING THE EARLY AGES OF THE EARTH'S EXISTENCE

We know very little about the climate during the Earth's first few billion years, but scientists think the Earth was warmer and the Sun less powerful than it is today. Subsequently, even if the overall climate was warmer, there were at least four periods of extreme cold between 1.7 billion years ago and 600 million years ago.



PALM TREES ONCE GREW AT THE NORTH POLE

During the Secondary era, when dinosaurs roamed our planet, the temperature at the poles sometimes reached 20°C. There was no ice cap, and the position of the continents at that stage meant that the ocean currents could circulate more freely, so the heat exchanges were greater than they are today. Then 65 million years ago, the Earth's climate became colder, and over the last 2-3 million years ice ages and warmer periods have alternated.

UNDERSTANDING THE PAST IN ORDER TO PREDICT THE FUTURE

How can we learn more about the long history of our planet's climate? By analysing the ice layers at the poles, by studying sediments and rocks, by examining fossils, by observing the growth of corals, etc. And a better understanding of how climate changes were caused in the past is a vital step towards predicting how that climate may change in future.