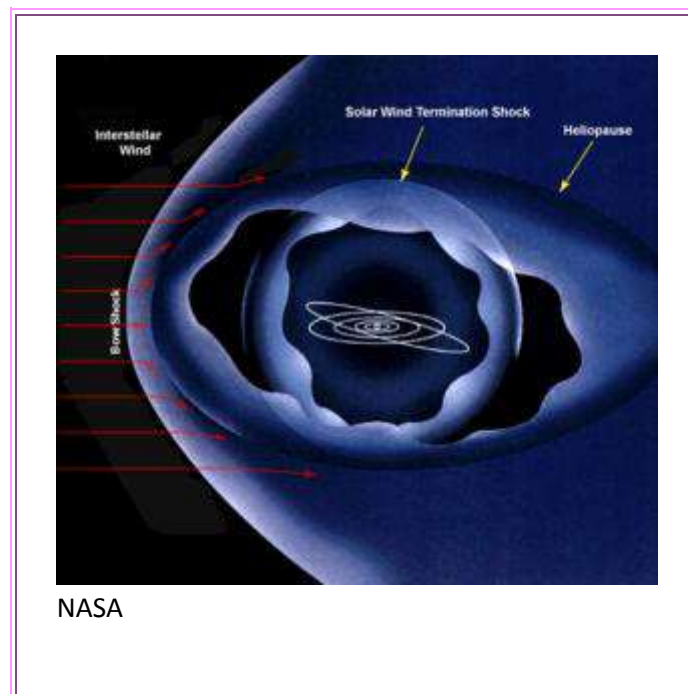


Ice Age by Cosmic Rays

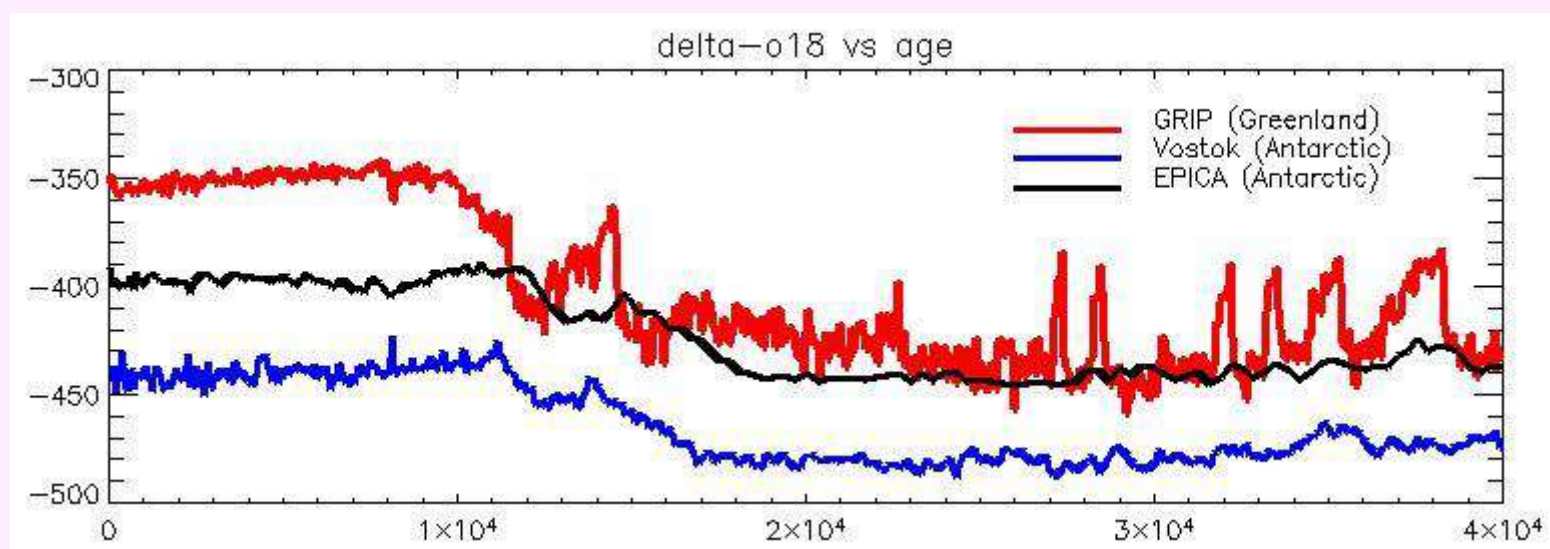


The solar system is encapsulated by a protective shield against cosmic rays called the heliosphere
its size and strength changes with the intensity of solar activity

The effective climate factor is the Cosmic Ray density

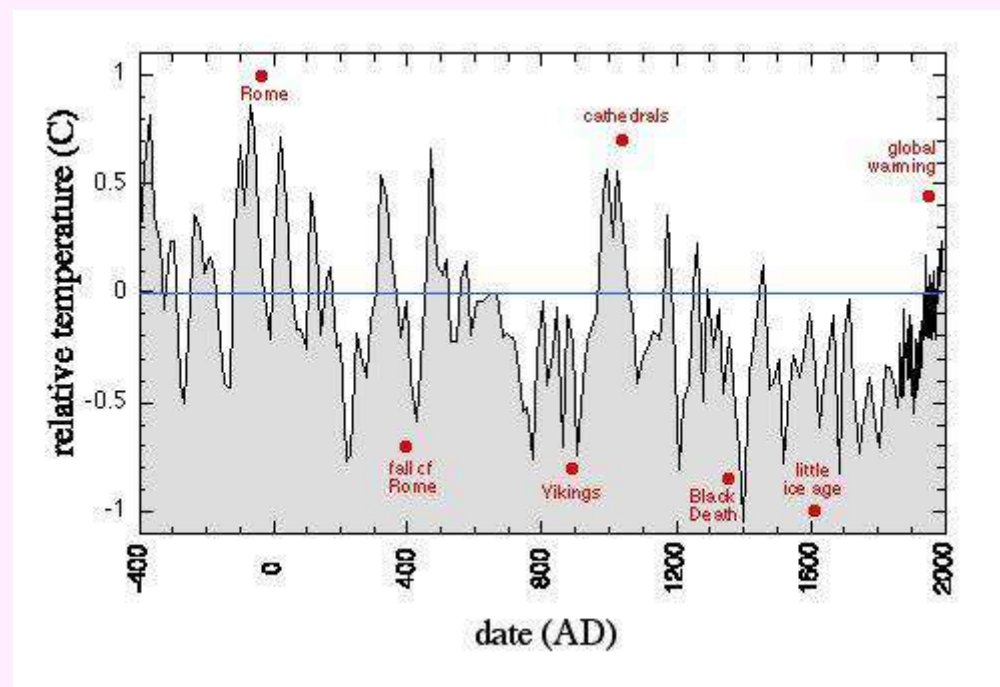
What effect really determines our climate when the solar forcing, represented the Milankovitch Cycles is too weak to have a major effect as the ice core data indicates?

We have also seen large temperature changes occurring over short timeframes that are neither statistically predictable, nor mechanistically predictable.



location of the Younger Dryas 14,000 to 11,400 ybp

For example 14,700 years ago, the Ice Age deep freeze has been interrupted with an enormous warm spell. In the brief span of only 50 years the climate warmed up by a whopping 22 degrees. Then, a few decades later, just as abruptly, the climate reverted back to Ice Age conditions for another 3000 years until it warmed up again, just as abruptly, to usher in the current interglacial period. We are talking about huge changes here that could not possibly have happened if the Sun had remained a constant factor. Of course we know now that the Sun isn't a constant factor.



see: [The history of climate](#)

When the Sun's activity decreased in the 1600s so that the sunspots almost disappeared for 30 years, the Earth went through a little Ice Age (a less than two degree cooling in respect to the medieval optimum at around 1000 AD, that we haven't even come close to again since that time).

Cosmic rays ionize the atmosphere, increasing cloudiness that reflects sunlight back into space, and is reducing the greenhouse effect that is 97% caused by water vapor. Both factors cause global cooling. Without the greenhouse the Earth would be a frozen snowball. The cosmic-ray intensity determines both factors.

[The Milankovitch \(26/41/100,000-year\) Cycles](#)

[The active climate factor: Cosmic-Ray density](#)

[What causes unpredictable short term temperature swings?](#)

[How solar variation cause mayor climate variation?](#)

[Of critical importance for our climate on Earth.](#)

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[If we err by not making the preparations](#)

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[Ice Age - Home Page](#)

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