

Research Highlights

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Recreating an atmosphere

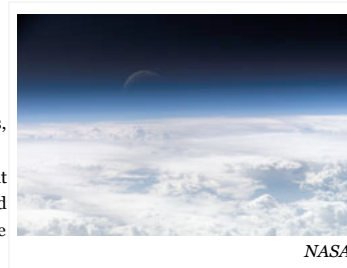
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[Science doi:10.1126/science.1157638 \(2008\) \(http://dx.doi.org/10.1126/science.1157638\)](http://dx.doi.org/10.1126/science.1157638)

Recreating past atmospheres is notoriously difficult, as few clues are left behind in the geological record. For the first time, scientists have reconstructed atmospheric circulation in the Mediterranean during the coldest part of the last glaciation, when ice sheets were at their peak.

Joachim Kuhlemann of the University of Tübingen, Germany, and colleagues used new and previously published glacial data on the height of the Alpine snowline, together with estimates of sea-surface temperature from foraminiferal records, to simulate changes in the three-dimensional structure of the atmosphere between the Last Glacial Maximum, from 23,000 to 19,000 years ago, and the present day. The Mediterranean-wide circulation maps they generate reveal frequent flows of cold polar air from the north, which seem to have been channelled through the frozen mountains of the Alps and the Pyrenees. Together with other atmospheric circulation patterns, the cold air flows appear to mirror and amplify those seen in the Little Ice Age, 500 to 100 years ago, suggesting that characteristic patterns are recurrent.

This reconstruction of the ancient Mediterranean atmosphere provides climate scientists with a wider context for understanding current climatic conditions, and may help in predicting future change.



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