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Multistage magma melting in the Galápagos plume

GREENLAND'S FIRN
Hiding an aquifer

TROPOSPHERIC OZONE
Decadal dynamics

GLACIAL HEINRICH EVENTS
Diverse impact on Atlantic overturning

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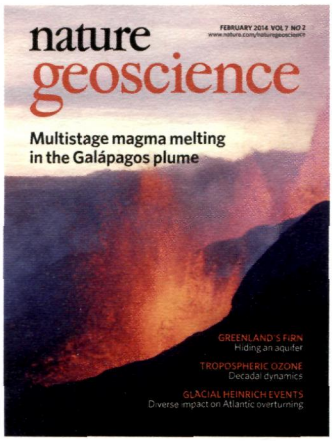

COVER IMAGE

Upwelling mantle plumes are thought to be sheared by the motions of the overlying tectonic plates. Seismic imaging of a hotspot beneath the Galápagos Islands, however, identifies a plume that is not deflected in the direction of plate motion and whose characteristics are instead controlled by multistage melting processes. The image shows lava and spatter issued on 27 October 2005 from two separate vents at Sierra Negra, one of the most active and voluminous volcanoes that overlie the Galápagos mantle plume.
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IMAGE: DENNIS GEIST

COVER DESIGN: DAVID SHAND

ON THE COVER

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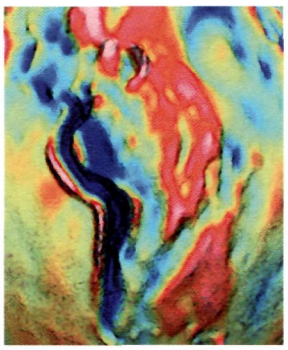

The dynamics of Earth's mantle are difficult to constrain. Analysis of GOCE satellite gravity data can be used to identify gravity anomalies to mid-mantle depths and hence to identify regions of tectonic-plate subduction and plume upwelling in the mantle. Image: IGN, IPGP, Univ. Paris 7

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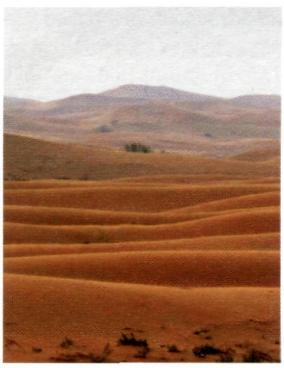

The dynamics of dune evolution under bimodal wind regimes are poorly understood owing to a lack of long-term wind records and the limitations of most experimental set-ups. A four-year landscape-scale experiment in the Tengger Desert, Mongolia, demonstrates that the orientation of oblique dune crests is controlled by the wind regime Image: Sylvain Courrech du Pont and Clément Narteau

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ARTICLES

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