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COVER
High-resolution (0.25 meters per pixel) hillshade map showing the topography of the San Andreas Fault in the Carrizo Plain of California. Two stream channels that bend at the fault have been displaced about 10 meters (lower right) by two earthquakes and 16 meters (upper left) by as many as five earthquakes, including the most recent earthquake in 1857. Blue indicates lower elevations. See pages 1117 and 1119.

Image: O. Zielke, J. R. Arrowsmith/Arizona State University, L. Grant Ludwig, S. O. Akçiz, G. R. Noriega/University of California, Irvine; topography data gathered by the B4 Project and processed by OpenTopography

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Satellite observations suggest that protons are accelerated in the shell of a supernova remnant.

Ferroelectric Control of Spin Polarization
V. Garcia et al.
Ferroelectric tunnel junctions control the spin polarization of electrons emitted from iron electrodes.

Integrated Catalytic Conversion of γ-Valerolactone to Liquid Alkenes for Transportation Fuels
J. Q. Bond et al.
A biomass-derived compound is transformed into hydrocarbon fuels and a CO2 stream amenable to sequestration.

Reconstructing Past Seawater Mg/Ca and Sr/Ca from Mid-Ocean Ridge Flank Calcium Carbonate Veins
R. M. Coggon et al.
Calcium carbonate veins from the ocean crust can be used to reconstruct past ocean cation ratios.

Climate-Modulated Channel Incision and Rupture History of the San Andreas Fault in the Carrizo Plain
L. Grant Ludwig et al.

Slip in the 1857 and Earlier Large Earthquakes Along the Carrizo Plain, San Andreas Fault
O. Zielke et al.
The historical behavior of the San Andreas Fault may have been dominated by smaller, more frequent slip events.

Individuals and the Variation Needed for High Species Diversity in Forest Trees
J. S. Clark
Within-species variation in response to environmental conditions may explain the coexistence of forest tree species.

Generating a Prion with Bacterially Expressed Recombinant Prion Protein
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Recombinant prion protein recapitulates the characteristics of the infectious agent in prion disease.

Inhibition of NF-κB Signaling by A20 Through Disruption of Ubiquitin Enzyme Complexes
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The multifunctional A20 protein can act in diverse ways to limit receptor-induced inflammatory signaling.

Photorhabdus luminescens Toxins ADP-Ribosylate Actin and RhoA to Force Actin Clustering
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A bacterial toxin targets and modifies the actin cytoskeleton in insect larvae.

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Noise induced by multiple binding sites, rather than deterministic bistability, may cause bimodal gene expression in yeast.

Cortical Plasticity Induced by Inhibitory Neuron Transplantation
D. G. Southwell et al.
Plasticity in the mouse brain’s visual cortex can be re-induced by neurons embedded by an earlier transplantation.
Science 327 (5969), 1055-1149.

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