COVER
Ordovician sedimentary rocks at Presqu’ile de Crozon, Brittany, France. These rocks show high-frequency cycles of less than 500,000 years between bay and open marine conditions. This and similar records allow reconstruction of global sea level from 550 to 250 million years ago. The pink boulder at the bottom is about 15 centimeters across. See page 64.

Photo: Bilal U. Haq

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J. R. Rooker et al.
Isotopes in the ear bones of tuna reveal that two populations—from the Gulf of Mexico and the Mediterranean—mingle in the Atlantic as adolescents but return home to breed. >> Science Podcast
10.1126/science.1161473

ASTROPHYSICS
A Large Excess in Apparent Solar Oblateness Due to Surface Magnetism
M. D. Fivian, H. S. Hudson, R. P. Lin, H. J. Zahid
Satellite measurements indicate that the sun is more oblate than previous measurements suggested, a shape resulting from the combined effects of rotation and magnetism.
10.1126/science.1160863

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Molecular Confinement Accelerates Deformation of Entangled Polymers During Squeeze Flow
H. D. Rowland, W. P. King, J. B. Pethica, G. L. W. Cross
When polymers are squeezed at nanometer scales, the longest chains unexpectedly flow more easily, even though in theory they should be the most entangled.
10.1126/science.1157945

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A prokaryotic version of ubiquitin, a eukaryotic tag for protein degradation, is linked to lysines in prokaryotic proteins destined for destruction, a process called pupylation.
10.1126/science.1163885

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RESEARCH ARTICLE: Kinome siRNA Screen Identifies Regulators of Ciliogenesis and Hedgehog Signal Transduction
M. Evangelista, T. Y. Lim, J. Lee, L. Parker, A. Ashique, A. S. Peterson, W. Ye, D. P. Davis, F. J. de Sauvage
Cdc2l1 is a component of the Hh signaling pathway and opposes the activity of the negative regulator Sufu.

PERSPECTIVE: A Wnt-fall for Gene Regulation—Repression
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A forward genetic screen in immortalized cells identifies NF-κB signaling components required to transduce signals from Toll-like receptors.

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