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Simulation of the reaction of nuclear waste glass with water. As the glass reacts, actinides concentrate as a stable mineral phase (blue areas) in the reacted glass and, during continued interaction with ground water, are released to solution as primary colloids. Models of nuclear repository integrity that fail to take colloid formation and transport into account may underestimate the potential for radioactivity release. See page 649. [Image: John K. Bates, Argonne National Laboratory]

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The Early Evolution of Eukaryotes: A Geological Perspective  
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Mitochondrial Genetics: A Paradigm for Aging and Degenerative Diseases?  
D. C. Wallace

**RESEARCH ARTICLES**

Solution Structure of a Calmodulin-Target Peptide Complex by Multidimensional NMR  
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Modulation of an NCAM-Related Adhesion Molecule with Long-Term Synaptic Plasticity in Aplysia  
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Colloid Formation During Waste Form Reaction: Implications for Nuclear Waste Disposal  
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A Global Traveling Wave on Venus  
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An Origin of DNA Replication and a Transcription Silencer Require a Common Element  
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Microdomains of High Calcium Concentration in a Presynaptic Terminal  
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**Cover**

Traveling cloud patterns on Venus

[*** Indicates accompanying News story or Perspective]

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