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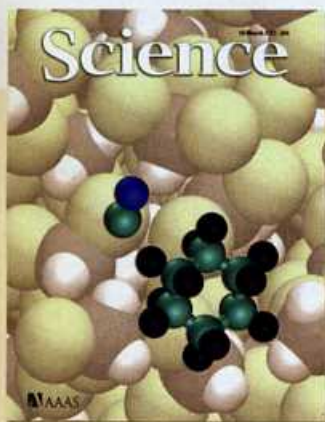
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COVER

Reaction of a CN radical with cyclohexane (ball-and-stick structures in green-blue and green-black, respectively) in dichloromethane solvent (space-filling representation). Observations of this reaction on the time scale of picoseconds reveal a wealth of information about the chemical mechanism and shed light on how solvents widely used in chemical synthesis influence reactions on a molecular scale. See page 1423.

Image: David R. Glowacki/School of Chemistry, University of Bristol

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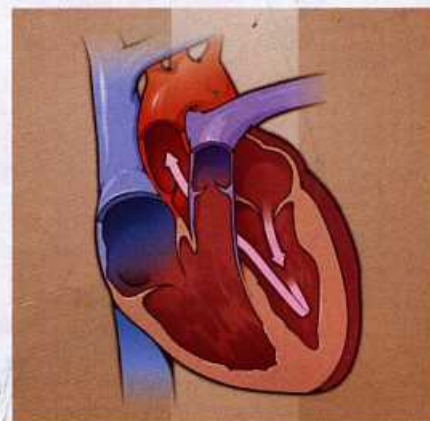
- 1404 **Atmospheric P_{CO_2} Perturbations Associated with the Central Atlantic Magmatic Province**
M. F. Schaller et al.
Emplacement of the Central Atlantic Magmatic Province 200 million years ago greatly elevated atmospheric carbon dioxide concentrations.
- 1409 **CRYPTOCHROME Is a Blue-Light Sensor That Regulates Neuronal Firing Rate**
K. J. Fogle et al.
Neurons in the brain that boost the morning response of the circadian rhythm are themselves directly responsive to light.
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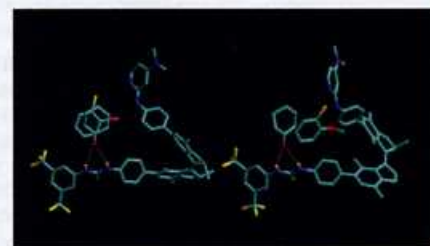
- 1414 **Rapid and Extensive Surface Changes Near Titan's Equator: Evidence of April Showers**
E. P. Turtle et al.
The Cassini spacecraft detected signs of recent methane rainfall on Titan's arid equatorial surface.
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- 1417 **Isotopic Evidence of Cr Partitioning into Earth's Core**
F. Moynier et al.
Chromium isotopes in meteorites reveal Earth's accretion history.
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- 1420 **Direct Observation of Continuous Electric Dipole Rotation in Flux-Closure Domains in Ferroelectric $Pb(Zr,Ti)O_3$**
C.-L. Jia et al.
Domains can be stabilized in a thin ferroelectric material through the continuous rotation of the dipoles.
- 1423 **Vibrationally Quantum-State-Specific Reaction Dynamics of H Atom Abstraction by CN Radical in Solution**
S. J. Greaves et al.
Molecular vibrations in a solution-phase reaction are detected at a level of detail rivaling that of gas-phase studies.
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- 1426 **Regeneration of Ammonia Borane Spent Fuel by Direct Reaction with Hydrazine and Liquid Ammonia**
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A method to regenerate lightweight, hydrogen-rich ammonia borane improves its prospects as a vehicular fuel source.
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- 1429 **Dynamic Control of Chiral Space in a Catalytic Asymmetric Reaction Using a Molecular Motor**
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- 1433 **Second-Order Selection for Evolvability in a Large *Escherichia coli* Population**
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Descendants of bacterial lineages that retained adaptation potential outcompeted competitors of higher fitness.
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- 1436 **Independent and Parallel Recruitment of Preexisting Mechanisms Underlying C_4 Photosynthesis**
N. J. Brown et al.
Recurrent evolution of C_4 photosynthesis is due to conserved regulatory sequences that localize photosynthetic enzymes.
- 1439 **Cardiac Myosin Activation: A Potential Therapeutic Approach for Systolic Heart Failure**
F. I. Malik et al.
A small molecule improves cardiac function by accelerating the transition of myosin into a force-producing state.
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- 1443 **Reversal of Interlaminar Signal Between Sensory and Memory Processing in Monkey Temporal Cortex**
D. Takeuchi et al.
Feed-forward signals flowing across cortical layers during sensory coding reverse direction during memory retrieval.
- 1447 **A Brief Social-Belonging Intervention Improves Academic and Health Outcomes of Minority Students**
G. M. Walton and G. L. Cohen
Reducing feelings of social exclusion yields lasting improvements in academic performance and health in college students.
- 1451 **Direct Interaction of RNA Polymerase II and Mediator Required for Transcription in Vivo**
J. Soutourina et al.
A direct functional contact of RNA polymerase II with Mediator activates transcription in eukaryotes.

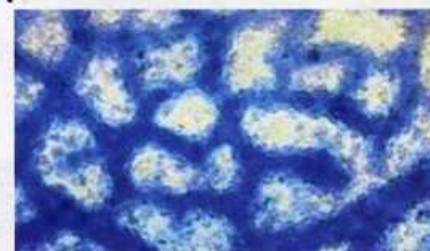
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