Three-dimensional computer models such as this one help researchers explore the mechanisms behind core-collapse supernovae, the violent death of short-lived massive stars. In the image, tubes represent paths of gas falling into a supernova, deflected by an accretion shockwave (horizontal width of 600 km); colors represent different velocities. The question of how stars explode is one of the “Mysteries of Astronomy” described in a special News package beginning on page 1090.

Visualization: Hongfeng Yu and Kwan-Liu Ma, University of California-Davis and the SciDAC Institute for Ultra-Scale Visualization; Simulation: John Blandin, North Carolina State University
BREVIA

1129  Structure of a 16-nm Cage Designed by Using Protein Oligomers
Y.-T. Lai et al.
A general computational method allows the design of proteins that self-assemble into a desired symmetric architecture.

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1130  Quantum Algorithms for Quantum Field Theories
S. P. Jordan et al.
A quantum computer may be able to efficiently simulate theories used to describe particle scattering in accelerators.
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1133  The Detection and Characterization of a Nontransiting Planet by Transit Timing Variations
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Analysis of the deviations in the orbit of a transiting exoplanet revealed an outer planet in the same planetary system.
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C. L. Smallwood et al.
Time-resolved spectroscopy is used to probe the dynamics of electron pairing recovery in a high-temperature superconductor.

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H. Yang et al.
The absence of defects and surface oxides at a graphene-silicon interface enables voltage control of graphene devices.

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Overlap between crystallites in vapor-grown graphene improves its electronic conductivity.

1147  Theory Untangles the High-Resolution Infrared Spectrum of the ortho-H₂-CO
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P. Jankowski et al.
High-level calculations assign the unusually complex spectrum of a molecular pair implicated in interstellar chemistry.

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The elusive enzyme that modifies proteins involved in building bone and teeth has now been identified.

1154  Evolution of a Vertebrate Social Decision-Making Network
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Across vertebrates, behaviorally relevant brain regions are remarkably conserved over 450 million years of evolution.

1157  Evolutionary Trade-Offs, Pareto Optimality, and the Geometry of Phenotype Space
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The fitness of an organism can be modeled graphically to determine how phenotypic trade-offs are maximized.

1160  Chitin-Induced Dimerization Activates a Plant Immune Receptor
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Structural analysis shows how fungus-derived chitin dimerizes its receptor on target plants and triggers defense responses.

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S. P. Atamas et al.

A naturally occurring peptide from endostatin to the multikinase inhibitor dasatinib.
10.1126/science.1220835
Science 336 (6085), 1077-1186.