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COVER
Human cells infected with the protozoan parasite Toxoplasma gondii visualized by scanning electron microscopy. In the foreground are parasites (yellow-green) rupturing out of a dying host cell (blue); in the background is an intact host cell containing a large parasite-filled vacuole. See page 530.

Image: Sasha Meshinchi, Michael Robinson, Bjorn Kafsack, and Vern Carruthers

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Earth’s Degassing: A Missing Ethane and Propane Source
G. Etiope and P. Ciccioli
Natural gas seepage contributes far more methane, ethane, and propane to the atmosphere than formerly realized.

Language Phylogenies Reveal Expansion Pulses and Pauses in Pacific Settlement
R. D. Gray et al.
Geographical distribution of Austronesian languages reveals the rate and direction of migrations from Taiwan 5200 years ago.

An Entanglement Filter
R. Okamoto et al.
A useful tool for quantum information processing transmits entangled photons only when they have the same polarization.

Quantum Teleportation Between Distant Matter Qubits
S. Olmschenk et al.
Transporting quantum states between trapped ions one meter apart may enable local storage of information in quantum memories.

Femtosecond XANES Study of the Light-Induced Spin Crossover Dynamics in an Iron(II) Complex
Ch. Bressler et al.
X-ray absorption spectroscopy resolves the dynamics of spin-state interconversions, which take place in less than a picosecond, in a well-studied class of iron compounds.

Complementary Active Sites Cause Size-Selective Reactivity of Aluminum Cluster Anions with Water
P. J. Roach et al.
Water dissociates at similar active sites on anionic aluminum clusters that have different sizes and electronic structure.

Brown Clouds over South Asia: Biomass or Fossil Fuel Combustion?
Ö. Gustafsson et al.
Biomass burning accounts for at least one-half of carbon-rich aerosols in the Asian atmospheric brown cloud that forms each winter.

Genetic Interactions Between Transcription Factors Cause Natural Variation in Yeast
J. Gerke et al.
Adaptive differences in yeast sporulation arise from single-nucleotide mutations in transcription factors regulating sex.
The mechanisms by which kinases activate themselves are still emerging.
Science

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