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Dating of calcite crusts overlaying art in Spanish caves shows that painting began more than 40,000 years ago.

Spin-Orbit Echo
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A distinct parameter, twisted spin, is predicted to be conserved in a two-dimensional semiconductor with spin-orbit interaction.

Dipolar Antiferromagnetism and Quantum Criticality in LiErF₄
C. Kraemer et al.
Scattering experiments reveal that magnetic ordering can arise from dipolar interactions, not only from exchange.

Ambient-Temperature Isolation of a Compound with a Boron-Boron Triple Bond
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A boron analog of an alkyne has been synthesized by reduction of a brominated precursor.

Reticulated Nanoporous Polymers by Controlled Polymerization-Induced Microphase Separation
M. Seo and M. A. Hillmyer
In situ preparation of a block copolymer can be used to induce microphase separation to make mesoporous materials.

Direct Detection of Projectile Relics from the End of the Lunar Basin–Forming Epoch
K. H. Joy et al.
Analysis of lunar rocks from the Apollo missions reveals fragments from meteorites that hit the Moon in the ancient past.

Sparse Pre-Columbian Human Habitation in Western Amazonia
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Analysis of soils in western Amazonia finds little evidence for pre-Columbian human occupations there.

A Three-Stage Symbiosis Forms the Foundation of Seagrass Ecosystems
T. van der Heide et al.
A marine plant, small mollusks, and their resident sulfide-oxidizing bacteria survive together.

Fear of Predation Slows Plant-Litter Decomposition
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The risk of being eaten by spiders changes the elemental composition of grasshoppers, which affects soil microbes.

Continental-Scale Effects of Nutrient Pollution on Stream Ecosystem Functioning
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Leaf-litter breakdown rates across 100 European streams offer insights into ecosystem health during eutrophication.

A Histone Acetyltransferase Regulates Active DNA Demethylation in Arabidopsis
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A plant epigenetic regulator recognizes both histones and methylated DNA and prevents gene silencing.

The Structures of COPI-Coated Vesicles Reveal Alternate Coatomer Conformations and Interactions
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The flexible coatomer complex makes contact with a variable number of neighbors and coats vesicles of variable size.

Awake Hippocampal Sharp-Wave Ripples Support Spatial Memory
S. P. Jadhav et al.
The neuronal “replay” of past experience may allow animals to retrieve specific memories and use them to guide behavior.
Adenylate Cyclases of Trypanosoma brucei Inhibit the Innate Immune Response of the Host D. Salmon et al. Parasites release cyclic adenosine monophosphate when swallowed up by myeloid cells, thereby turning off a host defense pathway.

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