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COVER
View of a ceiling in Altamira Cave, Cantabria, Spain (original image rotated 180°). The multicolor (brown and red) bison depicted here date to ~18,000 years ago but were painted on top of earlier single-color artwork (red). New uranium-thorium dates on calcite crusts show that the large (~50-centimeter) double-claviform figure (center right) is at least 35,600 years old, indicating that, at the latest, cave painting here began shortly after humans first arrived. See page 1409.

Photo: Pedro Saura
BREVIA

1408 Massive Phytoplankton Blooms Under Arctic Sea Ice
K. R. Arrigo et al.
In midsummer, diatoms have taken advantage of thinning ice cover to feed in nutrient-rich waters.

1432 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.

RESEARCH ARTICLE

1409 U-Series Dating of Paleolithic Art in 11 Caves in Spain
A. W. G. Pike et al.
Dating of calcite crusts overlaying art in Spanish caves shows that painting began more than 40,000 years ago.

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1413 Spin-Orbit Echo
N. Sugimoto and N. Nagaosa
A distinct parameter, twisted spin, is predicted to be conserved in a two-dimensional semiconductor with spin-orbit interaction.

1416 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.

1420 Ambient-Temperature Isolation of a Compound with a Boron-Boron Triple Bond
H. Braunschweig et al.
A boron analog of an alkyne has been synthesized by reduction of a brominated precursor.

1422 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.

1426 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.

1429 Sparse Pre-Columbian Human Habitation in Western Amazonia
C. H. McMichael et al.
Analysis of soils in western Amazonia finds little evidence for pre-Columbian human occupations there.

1434 Fear of Predation Slows Plant-Litter Decomposition
D. Hawlena et al.
The risk of being eaten by spiders changes the elemental composition of grasshoppers, which affects soil microbes.

1438 Continental-Scale Effects of Nutrient Pollution on Stream Ecosystem Functioning
G. Woodward et al.
Leaf-litter breakdown rates across 100 European streams offer insights into ecosystem health during eutrophication.

1440 p53 Dynamics Control Cell Fate
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The flexible coatamer complex makes contact with a variable number of neighbors and coats vesicles of variable size.

1454 Awake Hippocampal Sharp-Wave Ripples Support Spatial Memory
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The neuronal “replay” of past experience may allow animals to retrieve specific memories and use them to guide behavior.

1458 Segregation of Axonal and Somatic Activity During Fast Network Oscillations
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Inhibition by axo-axonic interneurons functionally separates the input and output of hippocampal pyramidal cells.