Animal domestication has been key to the development of human societies. The sequence of the bovine genome reveals new insights into the history and biology of cattle. See pages 522 and 528, and related research on horse and sheep genetics and domestication on pages 485 and 532.

Photo illustration: Yael Kats (images: Jupiterimages)

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486 The Disappearance of the Progenitors of Supernovae 1993J and 2003gd
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The presumed progenitor stars of supernovae are indeed absent in later images from these sites.

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Infiltration of spider silk with impurities enhances the mechanical performance.

492 Asymmetric Autocatalysis Triggered by Carbon Isotope (\(^{13}\text{C}/^{12}\text{C}\)) Chirality
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The origin of chirality in asymmetric autocatalysis is due to carbon isotope substitution.

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Seismic imaging reveals a global velocity anomaly at depths of 70 to 100 kilometers that may be from some melt or a strong fabric in Earth’s mantle.

499 Seismic Evidence for Sharp Lithosphere-Asthenosphere Boundaries of Oceanic Plates
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Detection of the presence of melt at variable depth beneath two oceanic plates reveals the vertical extent of old oceanic plates.

502 Subducting Slab Ultra-Slow Velocity Layer Coincident with Silent Earthquakes in Southern Mexico
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506 \(^{14}\text{CH}_4\) Measurements in Greenland Ice: Investigating Last Glacial Termination \(^{14}\text{CH}_4\) Sources
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Radiocarbon measurements show that wetlands were responsible for the rapid increase of atmospheric methane concentration during the last deglaciation.

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Q. A. Justman et al.
Interacting negative feedback loops control the sensitivity of amphibian oocytes to the hormone progesterone.

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A yeast membrane protein complex contains a domain that generates linear phosphate polymers from adenosine triphosphate.

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After prolonged wakefulness, people who are “night owls” do better at mental tests than those who are “early birds.”

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522 The Genome Sequence of Taurine Cattle: A Window to Ruminant Biology and Evolution
The Bovine Genome Sequencing and Analysis Consortium

528 Genome-Wide Survey of SNP Variation Uncovers the Genetic Structure of Cattle Breeds
The Bovine HapMap Consortium
A survey of genetic diversity of cattle suggests two domestication events in Asia and selection by husbandry.

532 Revealing the History of Sheep Domestication Using Retrovirus Integrations
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