First described by David Hilbert in 1891, the Hilbert curve is a one-dimensional fractal trajectory that densely fills higher-dimensional space without crossing itself. A new method for reconstructing the three-dimensional architecture of the human genome, described on page 289, reveals a polymer analog of Hilbert’s curve at the megabase scale.

Image: Leonid A. Mirny and Erez Lieberman-Aiden

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Reactome Array: Forging a Link Between Metabolome and Genome
A. Beloqui et al.
A microarray technique uses trapped, dye-associated metabolites to allow rapid global characterization of metabolic activity.

Unbiased Reconstruction of a Mammalian Transcriptional Network Mediating Pathogen Responses
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Inflammatory and antiviral programs in dendritic cells are controlled and tuned by a network of regulators.

Mapping Excited-State Dynamics by Coherent Control of a Dendrimer’s Photoemission Efficiency
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Persistent Currents in Normal Metal Rings
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The Shape and Surface Variation of 2 Pallas from the Hubble Space Telescope
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Like the asteroids Ceres and Vesta, Pallas is a protoplanet that has remained intact since its formation.

Evolutionary Development of the Middle Ear in Mesozoic Therian Mammals
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Fossil evidence and studies of mutant mice show that gene patterning allowed multiple evolutions of the mammalian middle ear.

Daily Electrical Silencing in the Mammalian Circadian Clock
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Clock-containing neurons in the mouse brain display complex electrophysiology not seen in other brain cells.

Broad and Potent Neutralizing Antibodies from an African Donor Reveal a New HIV-1 Vaccine Target
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High-throughput screening has revealed two new broadly neutralizing antibodies from a clade A–infected donor in Africa.

Comprehensive Mapping of Long-Range Interactions Reveals Folding Principles of the Human Genome
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Arterial-Venous Segregation by Selective Cell Sprouting: An Alternative Mode of Blood Vessel Formation
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Changes in global sea level and atmospheric carbon dioxide levels were similar during the past 20 million years. 10.1126/science.1179052

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An extended simulation uncovers the intricate steps whereby methane can be trapped in ice. 10.1126/science.1174010

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Audacity, Part 2: A Blueprint for Audacious Science

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The Entrepreneurial Bug

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The Protein Kinase CIPK15 Integrates the Response to Oxygen and Sugar Deficiency Allow Rice Seedlings to Tolerate Flooding

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