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# Implementing the Quantum von Neumann Architecture with Superconducting Circuits.

### M. Mariantoni et al.

A quantum version of a central processing unit was created with superconducting circuits and elements.

### Three-Dimensional Anderson Localization of Ultracold Matter.

#### S. S. Kondov et al.

A localized and a propagating component appear when an ultracold atomic gas expands in a disordered optical potential.

### Detection of Pulsed Gamma Rays Above 100 GeV from the Crab Pulsar. The VERITAS Collaboration.

This detection constrains the mechanism and emission region of gamma-ray radiation in the pulsar's magnetosphere.

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Thin zeolite films prepared through a polymer exfoliation method were used as selective membranes.

## A Major Constituent of Brown Algae for Use in High-Capacity Li-Ion Batteries.

### I. Kovalenko et al.

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# 79 A Self-Quenched Defect Glass in a Colloid-Nematic Liquid Crystal Composite.

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A high concentration of colloidal particles stabilizes a defect network in a liquid crystal and creates a gel-like material.

### Adaptation to Climate Across the *Arabidopsis Thaliana* Genome.

### A. M. Hancock et al.

Alleles that are under selection in *Arabidopsis* serve as genetic markers that can be used to predict local adaptation.

### A map of Local Adaptation in *Arabidopsis thaliana*.

### A. Fournier et al.

Field experiments identify loci associated with fitness and local adaptation in Arabidopsis.

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# The Shaping of Modern Human Immune Systems by Multiregional Admixture with Archaic Humans.

#### L. Abi-Rached et al.

Viral defense and embryo implantation mechanisms have been shaped by contributions from Neandertal and Denisovan genes.

An Aboriginal Australian Genome Reveals Separate Human Dispersals into Asia.

#### M. Rasmussen et al.

Whole-genome data indicate that early modern humans expanded into Australia 62,000 to 75,000 years ago.

Acetylcholine-Synthesizing T Cells Relay Neural Signals in a Vagus Nerve Circuit.

### M. Rosas-Ballina et al.

A neural circuit that involves a specialized population of memory T cells regulates the immune response.

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Linking Long-Term Dietary Patterns with Gut Microbial Enterotypes. G. D. Wu et al.

The Basic composition of the human gut microbiome is influenced by long-term diet: high fat and protein versus high fiber.

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### **COVER**

Scanning electron microscope image of strand of hair (about 80 micrometers wide) from the Aboriginal Australian whose genome was sequenced. The genomic sequence provides evidence for multiple dispersals into Asia of modern humans. See Page 94.

Courtesy of Timothy P. Topper, Natural History Museum of Denmark.