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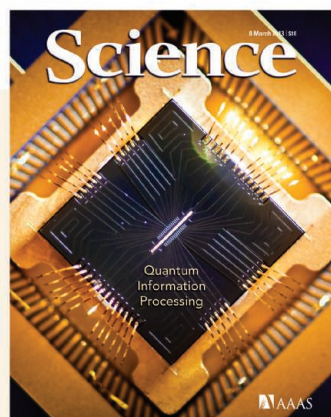
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COVER

Photograph of a silicon chip (area of entire chip: 33 mm²) that levitates individual atoms. Static and radio frequency voltages are applied to the array of electrodes at the center, creating an electric confinement for individual atomic ions, which hover ~0.1 mm above the chip. Such trapped ion systems are a leading physical implementation for quantum information processing. See the special section beginning on page 1163.

Photo: Curt Suplee and Emily Edwards, Joint Quantum Institute and University of Maryland; Chip fabrication: Sandia National Laboratories with support from the Intelligence Advanced Research Projects Activity

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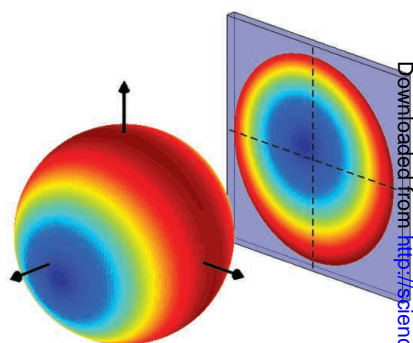
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