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A cosmological model treating dark matter as a coherent quantum wave agrees well with conventional dark-matter theory on an astronomical scale. But on smaller scales, the quantum nature of wave-like dark matter can explain dark-matter cores that are observed in dwarf galaxies, which standard theory cannot. Letter p496; News & Views p477

IMAGE: HSI-YU SCHIVE

COVER DESIGN: ALLEN BEATTIE

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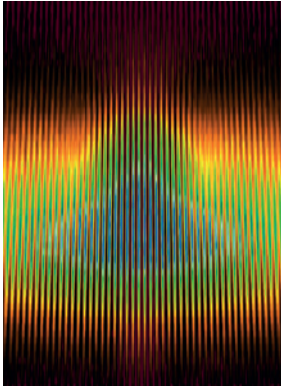
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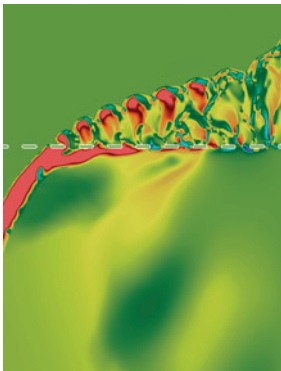
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Excitons — electron-hole pairs held together by the Coulomb force — are quasiparticles that are created when light interacts with matter. In metals, exciton generation is hard to detect; indeed, holes are usually not associated with metals. Now, using femtosecond laser pulses triggering three-photon photoemission processes, excitonic response is reported for silver surfaces. Letter p505; News & Views p480



The origin of the large magnetic fields observed in the interior of the supernova remnant Cassiopeia A is still unclear. Laboratory experiments with laser-produced shocks provide new insights into the mechanisms of magnetic field amplification. Letter p520

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