



MARCH 2016

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MACS J0416.1-2403

Astronomers can use galaxy clusters to help limits on how dark matter—the mysterious substance that makes up most of the matter in the Universe—interacts with itself. MACS J0416.1-2403 is one galaxy cluster that is part of a large observing campaign by Chandra and other telescopes to do just that. Chandra detects the hot gas that envelopes the cluster and glows brightly in X-rays (pink). When combined with Hubble's visible light data (blue), astronomers can map where the stars and hot gas are after the collision, as well as the inferred distribution of dark matter through the effect of gravitational lensing.

Credit: X-ray: NASA/CXC/Ecole Polytechnique Federale de Lausanne, Switzerland/D.Harvey & NASA/CXC/Durham Univ/R.Massey; Optical & Lensing Map: NASA/ESA/D. Harvey & R. Massey