



Musket Ball

A composite image of the 700 million year old “Musket Ball” cluster shows how hot gas has been wrenched apart from dark matter in a collision between clusters containing thousands of galaxies. This separation occurs because dark matter, unlike the particles of hot gas, is essentially frictionless. It has been observed in a few other clusters and is the most direct proof yet of the existence of dark matter. Chandra detects the normal matter as hot gas (red-purple), while optical emission from several telescopes reveals the presence of dark matter through the effect of gravitational lensing (blue). Hubble optical data also show galaxies which appear yellow and white.

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