



SCIENCE & EXPLORATION

The Bullet Cluster

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This is a composite image of the Bullet Cluster.

The Bullet Cluster is a much-studied pair of galaxy clusters, which have collided head on. One has passed through the other, like a bullet travelling through an apple. In the Bullet Cluster, this is happening across our line of sight, so we can clearly see the two clusters.

The optical image from the Magellan and the Hubble Space Telescope shows galaxies in orange and white in the background. Hot gas, which contains the bulk of the normal matter in the cluster, is shown by the Chandra X-ray image, which shows the hot intracluster gas (pink). Gravitational lensing, the distortion of background images by mass in the cluster, reveals the mass of the cluster is dominated by dark matter (blue), an exotic form of matter abundant in the Universe, with very different properties compared to normal matter.

This was the first clear separation seen between normal and dark matter.

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