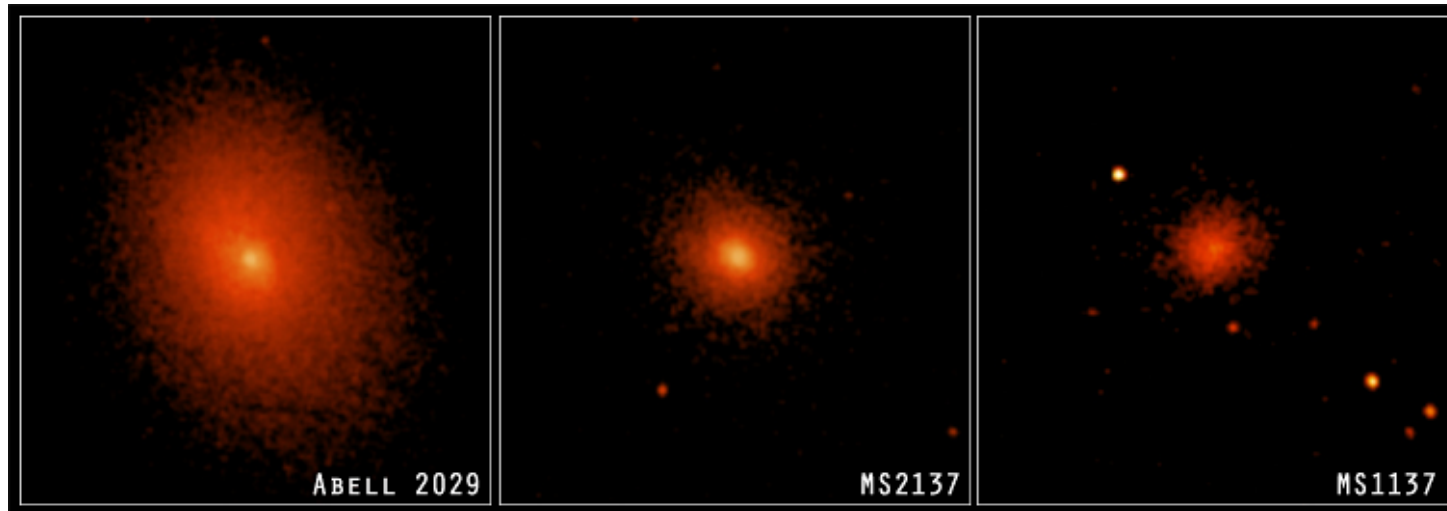




Chandra Science Highlight

GALAXY CLUSTERS AND DARK ENERGY: CHANDRA OPENS NEW LINE OF INVESTIGATION ON DARK ENERGY



Chandra's images of three galaxy clusters, from left to right Abell 2029, MS2137.3-2353, and MS1137.5+6624, at distances of 1 billion, 3.5 billion, and 6.7 billion light years, respectively. These clusters are part of a study that used 26 Chandra images of galaxy clusters to study the rate of expansion of the Universe.

- The study used X-ray determinations of the amount of hot gas and dark matter in the clusters to set limits on the curvature of the universe, and hence the relative amounts of normal, or baryonic matter, dark matter, and dark energy. Dark energy was found to make up about 75% of the Universe, dark matter about 21%, and normal matter about 4%.
- The study confirms that the expansion of the universe stopped slowing down about 6 billion years ago, and began to accelerate.

Reference: S. Allen et al. 2004, Monthly Notices Roy. Astron. Soc. (In press)