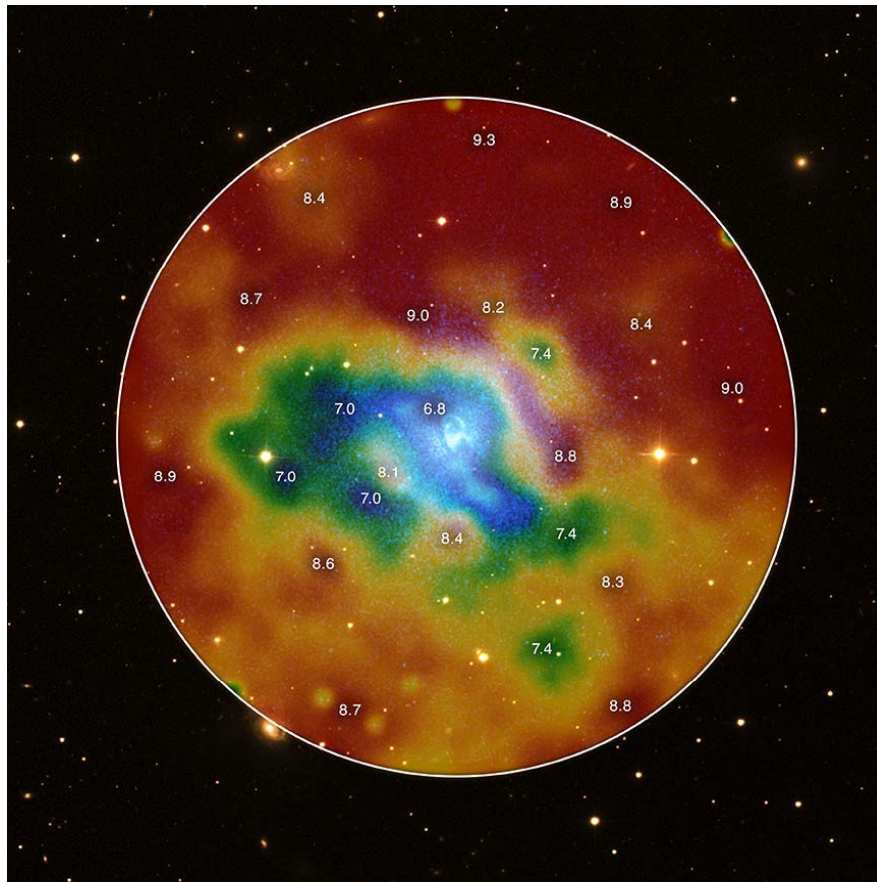




Chandra Science Highlight

An Intergalactic Weather Map Around NGC 5813, the Central Galaxy in a Galaxy Group



This composite image is an intergalactic “weather map” showing the range of temperatures in MK in a circular portion of the gas that fills the space between galaxies in a group of galaxies about 105million light years from Earth.

- The temperature variation is relatively small, only about 30% across several hundred thousand light years.
- In absence of a central heat source, the region near the center of the map, where the gas has the highest density, should have cooled to much lower temperatures.
- Regular outbursts generated by a supermassive black hole in NGC 5813 keep gas from cooling down enough to form stars.
- Shock waves from the most recent outburst, which occurred about 3 million years ago in Earth’s time frame, show up as a “figure eight” structure at the center of the image.

References: S. Randall et al. 2010, ApJ (in press); arXiv:1006.4379

Credit: X-ray: NASA/CXC/SAO/S.Randall et al., Optical: SDSS

Chandra X-ray Observatory ACIS image Scale: Image is 12 arcmin on a side (367,000 light years)

Distance Estimate: 105million light years.

CXC operated for NASA by the Smithsonian Astrophysical Observatory

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