



**Chandra X-Ray  
Observatory Center**

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**GRB 991216:** A gamma-ray burst that exploded roughly 8 billion years ago.  
**Credit:** NASA/CNR/Piro et al.

An international team of researchers used the Chandra X-ray Observatory to detect never-before-seen properties in the X-ray afterglow of a gamma-ray burst (GRB). GRBs are mysterious blasts of high-energy radiation, believed to be the most powerful explosions in the universe. Chandra's latest discovery of iron emission lines from the ejected material surrounding GRB 991216 strengthens the case for a "hypernova" model for GRBs. In this theory, GRBs are caused by massive stars that collapse under their own weight, releasing gigantic amounts of energy.

*Chandra X-ray Observatory HETG/ACIS images above.*