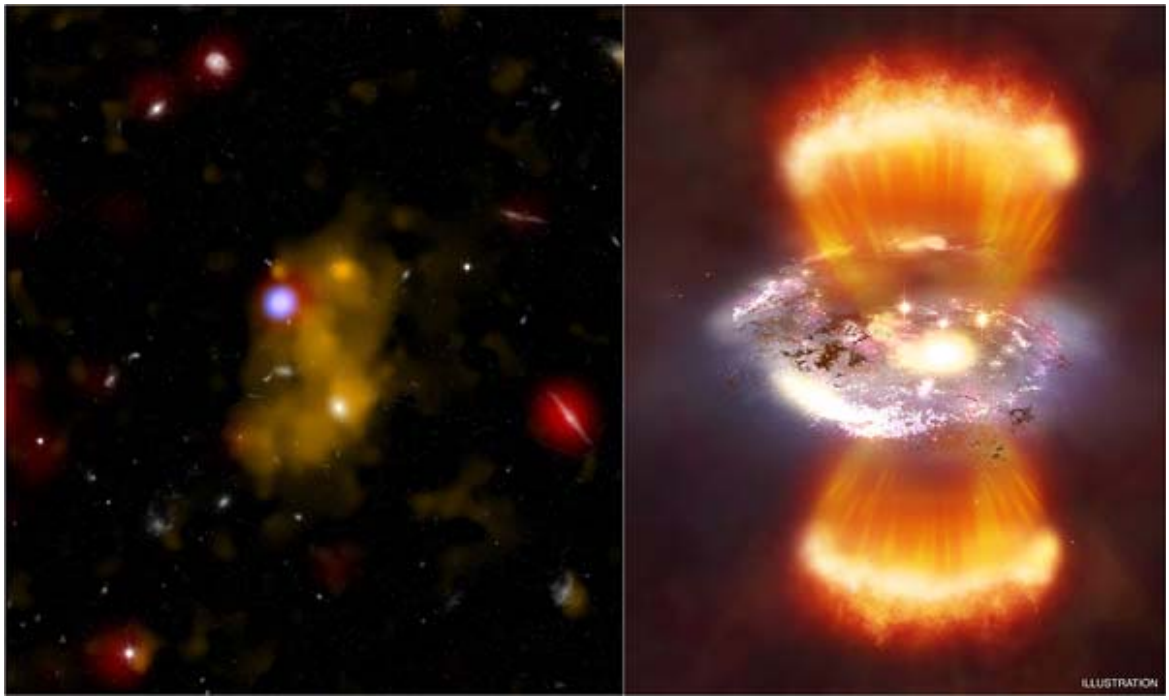

Chandra X-ray Observatory Center

Harvard-Smithsonian Center for Astrophysics
60 Garden St. Cambridge, MA 02138 USA
http://chandra.harvard.edu

Lyman Alpha Blobs: Giant reservoirs of hydrogen gas about 10 billion light years away.
(Credit: Left panel: X-ray (NASA/CXC/Durham Univ./D.Alexander et al.); Optical (NASA/ESA/STScI /IoA/S.Chapman et al.); Lyman-alpha Optical (NAOJ/Subaru/Tohoku Univ./T.Hayashino et al.); Infrared (NASA/JPL-Caltech/Durham Univ./J.Geach et al.); Right, Illustration: NASA/CXC/M.Weiss)

Caption: Researchers have used Chandra to study 29 “blobs” of hydrogen gas in the early Universe. The X-ray data (blue) reveal the presence of growing supermassive black holes inside five of these blobs (one of which is shown in the left panel). Along with bursts of star formation, the black holes are responsible for heating the blobs’ gas – depicted in the artist’s illustration on the right. The results suggest that blobs represent a stage when the galaxies and black holes are just starting to switch off their rapid growth because of these heating processes.

Scale: Left panel is 38 arcsec across.

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory