



Illustration of an Intergalactic Gas Cloud: A huge cloud of hot gas 800 million light years from Earth.

Credits: Illustration: SAO/CXC/A.Hobart, Spectrum: NASA/MIT/T.Fang et al.

This artistic rendering illustrates how X-rays from a distant quasar dim as they pass through a cloud of the intergalactic gas. Four independent teams of scientists have detected intergalactic gas clouds with temperatures in the range 300,000 to 5 million degrees Celsius by observing quasars with Chandra. The spectrum of the quasar PKS 2155-304 in the inset shows absorption due to oxygen in the hot gas and allows astronomers to estimate the temperature, density and mass of the absorbing cloud. The hot gas appears to lie like a fog in channels carved by rivers of gravity and to form part of a gigantic system of hot gas and dark matter that defines the cosmic landscape. This system is thought to contain more material than all the stars in the universe.