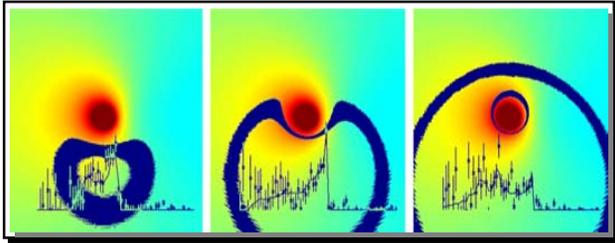


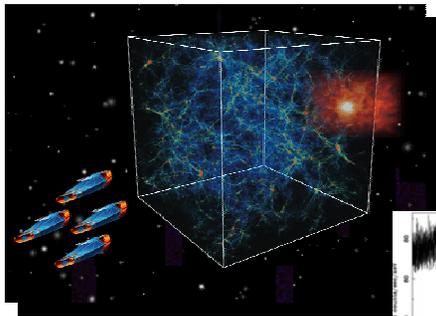
# Science Overview

*Constellation-X will open new windows towards understanding the Universe*

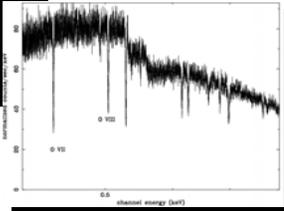


- **Observe the effects of General Relativity near black hole event horizons**

- Probe 100,000 times closer to black hole than before
- Determine black hole spin and mass from iron profiles over a wide range of luminosity and redshift

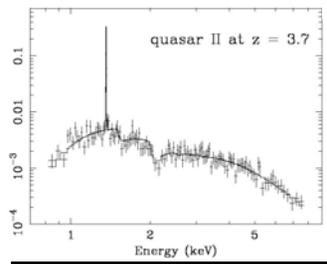
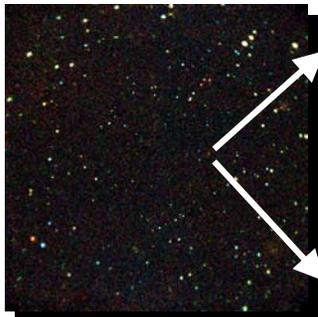


*Absorption*



- **Map formation and evolution of dark matter structures throughout the Universe**

- Detect ionized gas in the hot Inter Galactic Medium via absorption lines in spectra of background quasars
- Map the distribution of dark and baryonic matter trapped in the gravitational potential of clusters
- Observe the faintest, most distant clusters to determine redshift and mass to constrain Cosmological models and parameters



- **Determine the nature of faint X-ray sources discovered by Chandra**

- Obtain detailed spectra to determine physical processes prevalent in redshifts ranging to  $\sim 5$

Chandra Deep Field