

# **Reflections of SMBH's with their environments**

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We discuss the effects of outbursts from supermassive black holes (SMBH) in luminous galaxies on surrounding gaseous atmospheres with emphasis on the Chandra observations of M87. The Chandra observations of M87 show both a system of buoyant bubbles as well as weak shock waves. In addition, we compare SMBH outbursts in systems from early type galaxies to rich clusters.