# Chandra Observations of the HII Regions in M33

Jonathan C. McDowell, G. Fabbiano , V. Kalogera (*Harvard-Smithsonian Center for Astrophysics*)

## Abstract

We present preliminary Chandra observations of the X-ray emission from the brightest star formation regions in M33 In many cases the images are taken far off-axis where the point spread function is up to 10 arcseconds across, and so only hint at the detail which will be visible in targeted observations.

The nearby, relatively face-on galaxy M33, which is forming stars at a rate of about 0.3 Msun/yr, is rich in complex emission nebulae, dominated by the giant HII region NGC 604, which is seen as an extended soft X-ray nebula in the Chandra data. Our initial conclusion is that diffuse, hot X-ray emitting gas is present in at least some of the M33 HII regions. However, the observed X-ray to optical flux ratio of these HII regions varies widely. We cannot yet determine to what extent this variation is due to extinction versus intrinsic processes.

CATEGORY: NORMAL GALAXIES