The X-ray source population of the Orion Nebula Cluster

E. Feigelson, P. Broos, J. Gaffney, G. Garmire, L. Townsley (*Penn State*) L. Hillenbrand (*CalTech*), S. Pravdo (*JPL*)

[Contributed talk, 15min.]

Abstract

The Orion Nebula Cluster (ONC, Ori OB Id association) which ionizes the Orion Nebula HII region was imaged in two exposures totalling 83 ks with the ACIS-I detector during the first year of the Chandra mission. This is the richest field of X-ray point sources in the sky with 1075 sources detected. Nearly all are pre-main sequence members of the ONC with masses ranging from 50 to 0.05 $M_\odot$ and ages from 10^5 to 10^7 yrs. We provide here an overview of the X-ray source population with selected results such as: the unusual flat $\log N - \log S$ distribution, the absence of a relationship between X-rays and rotation, the common presence of very hard spectral components ($kT = 5$ to $>$10 keV) and narrow spectral features, emission from deeply embedded protostellar sources, the relationship of X-ray with stellar mass, and the wide dispersion of luminosities from higher mass stars.

CATEGORY: NORMAL STARS AND WHITE DWARFS