

[7GC-11] **Chandra Archival Survey of Galaxy Clusters: I. X-ray Point Sources**

Minsun Kim¹, Eunhyeuk Kim²

¹*Korea Astronomy and Space Science Institute,* ²*Seoul National University*

We carry out a study of galaxy clusters based on Chandra archival data. We first investigate the physical properties of X-ray point sources in galaxy clusters. We detect ~46,000 X-ray point sources in ~650 Chandra ACIS observations of ~400 galaxy clusters, covering 32 deg² in the sky. We present the distributions of source counts and source fluxes of X-ray point sources in various energy bands. In addition, we show the distributions of X-ray colors and hardness ratio of X-ray point sources in galaxy clusters. We further inspect the spatial distribution of X-ray point sources to investigate the radial distribution of the X-ray point sources in galaxy clusters.

[7GC-12] **Variability monitoring of blazars**

HyunJoo Goh¹, SoojongPak¹, Chung-UkLee², Hong-SuhYim², BongWonSohn²,
Minfeng Gu³, MinhwanJang¹, In-OkSong¹

¹*Dept. of Astronomy and Space Science, Kyung Hee University, Yongin-si, Kyunggi-do, 446-701, South Korea*

²*Korea Astronomy and Space Science Institute, 61-1, Whaam-dong, Yuseong-gu, Daejeon 305-348, Republic of Korea*

³*Shanghai Astronomical Observatory, Chinese Academy of Sciences, 80 Nandan Road, Shanghai 200030, P.R. China*

Blazar is a class of active galactic nuclei (AGN) which exhibits large variability on various timescale. We have carried out optical variability monitoring of ten blazars, Mrk 335, 3C 66A, AO 0235+16, S5 0716+714, PKS 0735+178, OJ 287, 3C 345, BL Lac, Ark 564 and 3C 454.3, from September 2003 to October 2007. Our goal is investigating variability mechanism and physical features at emission region. Photometry in four optical bands (BVRI) has been carried out with the 61cm telescope at the Mt. Sobeak Observatory in Korea, the 1.8m telescope at the Mt. Bohyun Observatory in Korea and the 1.0m robotic telescope at the Mt. Lemmon Observatory in Arizona. Variability in magnitudes and colors of blazars are presented. Variability studies are powerful tool to investigate blazar emission and to discriminate among the various theoretical interpretations. We propose that the different relative contributions of the thermal versus non-thermal radiation to the optical emission may be responsible for the different trends of the colour index with brightness in different types of blazars