[포GC-01] Multifrequency polarization monitoring of a blazar 3C279

Sincheol Kang[1], Sang-Sung Lee[1], Do-young Byun[1], and Myounghee Han[1]
[1]*Korea Astronomy and Space Science Institute*

In the center of an Active Galactic Nuclei(AGN) is a supermassive black hole which accretes matter from its surroundings. The radio-loud AGN launch two relativistic jets perpendicular to the accretion disk which terminates into radio lobes located up to megaparsec away. Blazars form a small subset of radio-loud AGNs with one of two relativistic jets pointing toward the observer's line of sight. Many blazars often show flares at different frequencies. And these flares at different frequencies are known that they often correlate with each other. In 2013 December, there was a gamma-ray flare in 3C 279, one of the brightest blazars, Dec 2013. So we want to reveal that whether this flare correlates with radio flare or not, and where the flare originate. With polarization observation at radio frequencies, we can study the physical properties of the magnetic field in the innermost regions of the relativistic jets. Therefore, we have conducted polarization monitoring of this source from Dec. 2013 to Jun. 2014 with KVN(Korea VLBI Network) radio telescopes at 22, 43 and 86GHz. Here we present the initial results of the monitoring of 3C 279. We prospect that we can reveal the origin of this gamma-ray flare by comparing with our radio data.

[포GC-02] Hierarchical Structure of Star-Forming Regions in the Local Group

Yongbeom Kang[1], Luciana Bianchi[2], Jaeman Kyeong[1], Hyunjin Jeong[1]
[1]*Korea Astronomy and Space Science Institute,*
[2]*Department of physics and astronomy, Johns Hopkins University*

Hierarchical structure of star-forming regions is widespread and may be characteristic of all star formation. We studied the hierarchical structure of star-forming regions in the Local Group galaxies (M31, M33, Phoenix, Pegasus, Sextans A, Sextans B, WLM). The star-forming regions were selected from Galaxy Evolution Explorer (GALEX) far-UV imaging in various detection thresholds for investigating hierarchical structure. We examined the spatial distribution of the hot massive stars within star-forming regions from Hubble Space Telescope (HST) multi-band photometry. Small compact groups arranged within large complexes. The cumulative mass distribution follows a power law. The results allow us to understand the hierarchical structure of star formation and recent evolution of the Local Group galaxies.