the global kinematics, respectively. Using the surface densities and velocity dispersions of the kinematically decomposed HI gas maps together with the rotation curve of NGC 6822, we derive Toomre-Q parameters for individual regions of the galaxy which quantify the level of local gravitational instability of the gaseous disk. We also measure the local star formation rate (SFR) of the corresponding regions in the galaxy by combining GALEX Far-ultraviolet (FUV) and WISE 22μm images. We then relate the gas and SFR surface densities in order to investigate the local Kennicutt-Schmidt (K-S) law of gravitationally unstable regions which are selected from the Toomre Q analysis. Of the three groups, the bulk-narrow, bulk-broad and non-bulk gas components, we find that the lower Toomre-Q values the bulk-narrow gas components have, the more consistent with the linear extension of the K-S law derived from molecular hydrogen (H2) observations.

[포 GC-11] High-resolution mass models of the Large Magellanic Cloud

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We perform disk-halo decomposition of the Large Magellanic Cloud (LMC) using a novel HI velocity field extraction method, aimed at better deriving its HI kinematics and thus mass distribution in the galaxy including both baryons and dark matter. We decompose all the line-of-sight velocity profiles of the combined HI data cube of the LMC, taken from the Australia Telescope Compact Array (ATCA) and Parkes radio telescopes with an optimal number of Gaussian components. For this, we use a novel tool, the so-called BAYGAUD which performs profile decomposition based on Bayesian MCMC techniques. From this, we disentangle turbulent non-ordered HI gas motions from the decomposed gas components, and produce an HI bulk velocity field which better follows the global circular rotation of the galaxy. From a 2D tilted-ring analysis of the HI bulk velocity field, we derive the rotation curve of the LMC after correcting for its transverse, nutation and precession motions. The dynamical contributions of baryons like stars and gaseous components which are derived using the Spitzer 3.6 micron image and the HI data are then subtracted from the total kinematics of the LMC. Here, we present the bulk HI rotation curve, the mass models of stars and gaseous components, and the resulting dark matter density profile of the LMC.

[포 GC-12] Searching for Spectrally Variable AGNs using Multi-epoch Spectra from SDSS

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Using multi-epoch spectra of active galactic nuclei (AGN) obtained from the Sloan Digital Sky Survey, we identify 16 spectrally variable sources, for which the spectral shapes of broad emission lines significantly vary with a time scale of yrs. Out of them, 3 AGNs are already known as changing-look (CL) AGNs by previous studies. 6 AGNs are newly identified as CL AGNs from our study. A majority of these AGNs are relatively faint and their variability in the continuum is small, which may explain their non-detection in the previous studies. 7 sources are known as binary AGN candidates based on the systematic velocity offset between broad emission lines and narrow emission lines. For those sources and 3 CL AGNs, we find that the peak of broad emission lines had been shifted up to a few thousands km/s for ~10 years, implying that those can be promising candidates for pc-scale binary AGNs or recoiling black holes. We plan to conduct multiwavelength follow-up studies to nail down the physical origin of the velocity shift.

[포 GC-13] The strategy to catch more early light curves of supernovae

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The Intensive Monitoring Survey of Nearby Galaxies (IMSNG) is a high cadence observation program monitoring nearby galaxies at < 50 Mpc with high probabilities of hosting supernovae (SNe). The current number of main IMSNG targets is 60, but with new wide-field facilities joining IMSNG,