Medium-deep Survey (IMS), a moderately wide (120 deg2) and deep (JAB ~ 22.5 - 23 mag) near-infrared imaging survey. Combining this with the optical (ugriz) imaging data from the CFHT Legacy Survey (CFHTLS), we have identified more than 10 faint quasar candidates at z~6 in the IMS field by using multiple color selection criteria. From now on, we will perform spectroscopic confirmations of these faint quasar candidates with IMACS on the Magellan Baade Telescope at Las Campanas Observatory and GMOS on the Gemini South Telescope at Gemini Observatory. The confirmed quasars will be used to constrain the faint-end slope of the quasar luminosity function at z~6 and calculate the ratio of quasar ionizing flux to required flux for reionization of the universe. Moreover, these confirmed quasars will be followed up with near-infrared spectroscopy to determine their black hole masses and Eddington ratios to check the rapidness of their growth.

[포 GC-05] Demographics of Isolated Galaxies along the Hubble Sequence

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Isolated galaxies in low-density regions are significant in the sense that they are least affected by the hierarchical pattern of galaxy growth and interactions with perturbers at least for the last few Gyr. To form a comprehensive picture of the star formation history of isolated galaxies, we construct a catalog of isolated galaxies and their comparison sample in relatively denser environments. The galaxies are drawn from SDSS DR7 in the redshift range of $0.025 < z < 0.044$. We performed visual inspection and classified their morphology following the Hubble classification scheme. We have investigated the color-magnitude diagram and found elliptical and unbarred spiral galaxies in isolated systems are relatively fainter and bluer than those in denser regions. For the spectroscopic study, we make use of the OSSY catalog (Oh et al. 2011). Our analysis on the absorption-line properties based on the comparison with stellar population models suggests that isolated elliptical galaxies are likely to be younger and metal poorer, while isolated Sc-type galaxies seem to have older luminosity-weighted ages, than their high-density counterpart. In addition, according to the BPT diagnostics, early-type galaxies among isolated galaxies are rather evenly classified into star forming, composite, Seyfert and LINER, whereas their comparisons are mainly populated in the LINER region. On the other hand, late-type galaxies do not show any prominent difference. We discuss the evolutionary histories of isolated galaxies in the context of the standard ΛCDM cosmology.

[포 GC-06] No asymmetric outflows from Sagittarius A* during the pericenter passage of the gas cloud G2

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The gas cloud G2 falling toward Sagittarius A* (Sgr A*), the supermassive black hole at the center of the Milky Way, is supposed to provide valuable information on the physics of accretion flows and the environment of the black hole. We observed Sgr A* with four European stations of the Global Millimeter Very Long Baseline Interferometry Array (GMVA) at 86 GHz on 1 October 2013 when parts of G2 had already passed the pericenter. We searched for possible transient asymmetric structure — such as jets or winds from hot accretion flows — around Sgr A* caused by accretion of material from G2. The interferometric closure phases (which are zero if the spatial brightness distribution of the target is symmetric, and deviate from zero otherwise) remained zero within errors during the observation time. We thus conclude that Sgr A* did not show significant asymmetric (in the observer frame) outflows in late 2013. Using simulations, we constrain the size of the outflows that we could have missed to $\approx$ 2.5 mas along the major axis, $\approx$ 0.4 mas along the minor axis of the beam, corresponding to approximately 232 and 35 Schwarzschild radii, respectively; we thus probe spatial scales on which the jets of radio galaxies are suspected to convert magnetic into kinetic energy. As probably less than 0.2 Jy of the flux from Sgr A* can be attributed to accretion from G2, one finds an effective accretion rate $\eta\dot{M} \lesssim 1.5 \times 10^{9}$ kg/s $\approx 7.7 \times 10^{-9} M_{earth}$ / yr for material from G2. Exploiting the kinetic jet power-accretion power relation of radio galaxies, one finds that the rate of accretion of matter that ends up in jets is