accretion rate, flat spectrum radio quasars and BL Lac objects, having different scaling relations with $\alpha \approx 1$ and ≈ 2, respectively. We find that modelling the periodograms of four of our sources requires the assumption of broken powerlaw spectra. From simulating lightcurves as superpositions of exponential flares we conclude that strong overlap of flares leads to featureless simple power-law periodograms of AGNs at radio wavelengths in most cases (The paper is about to be submitted to ApJ).

[구 GC-16] Acceleration of Relativstic Jets on Sub-parsec Scales

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Jets of compact radio sources are highly relativistic and Doppler boosted, making studies of their intrinsic properties difficult. Observed brightness temperatures can be used to study the intrinsic physical properties of the relativistic jets. The intrinsic properties of relativistic jets depend on inner jet models. We aimed to observationally test the inner jet models. The very long baseline interferometry (VLBI) cores of compact radio sources are optically thick at a given frequency. The distance of the core from the central engine is inversely proportional to the frequency. Under the equipartition condition between the magnetic field energy and particle energy densities, the absolute distance of the VLBI core can be predicted. We compiled the brightness temperatures of VLBI cores at various radio frequencies of 2, 8, 15, and 86~GHz. The brightness temperatures in the rest frame were investigated in the sub-parsec regions of the compact radio sources. From the vicinity of the central engine, the brightness temperatures increased slowly and then rose with steeper slope, indicating that the Lorentz factor increases along the jet. This implies that the jets are accelerated in the (sub-)parsec regions from the central engine.

[구 GC-17] The drivers and energetics of ionized gas outflows in powerful Type 2 AGN in the local Universe

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There exist scaling relations that link the mass of supermassive black holes with both the velocity dispersion and the mass of the central stellar cusp of their host galaxies. This implies that galaxies co-evolve with their central black holes, potentially through the feedback from actively accreting supermassive black holes (AGN). We use integral field spectroscopy data from the 8.2m Gemini-North telescope to investigate ionized gas outflows in luminous local (z<0.1) Type 2 AGN. Our sample of 6 galaxies was selected based on their [OIII] dust-corrected luminosity (>10^{42} erg/s) and signatures of outflows in the [OIII] line profile of their SDSS spectra. These are arguably the best candidates to explore AGN feedback in action since they are < 1% of a large local type 2 AGN SDSS sample selected based on their [OIII] kinematics. Expanding on previously reported results concerning the kinematic decomposition and size determination of these outflows, here we report their photoionization properties and energetics. We find strong evidence that connect the extreme kinematics of the ionized gas with AGN photoionization. The kinematic component related to the AGN-driven outflow is clearly separated from other kinematic components, such as gravitation- or stellar-driven motions, on the velocity and velocity dispersion diagram. Our spatially resolved kinematic analysis reveals that up to 90% of the mass and kinetic energy of the outflow is contained within the central kiloparcec of the galaxy. The total mass and kinetic energy of the outflow correlate well with the AGN bolometric luminosity, resulting in energy conversion efficiencies between 0.01% and 1%. Intriguingly, we detect ubiquitous signs of ongoing circumnuclear star formation. Their small size, the centrally contained mass and energy, and the universally detected circumnuclear star formation cast doubts on the potency of these AGN-driven outflows as agents of negative feedback.

[구 GC-18] Discovery of a Faint Quasar at z ~ 6 and Implications for Cosmic Reionization

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