[구GC-13] The Spitzer First Look survey Verification Field : Deep Radio and multi-wavelength properties

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We observed the radio sources found from the First Look Survey (FLS) field at the 1.4 GHz radio continuum emission with the Very Large Array (VLA) using the A configuration. We identify point sources and multi component sources at ≥ 4σ level. We also present the submillimeter properties of the selected radio sources in the FLS field from the Herschel/SPIRE 250/350/500/ μm and AzTEC 1.1mm surveys. The counterparts of the radio sources at submillimeter for these called 'submillimeter galaxies (SMGs)' are detected at infrared wavelength with the Spitzer MIPS 24 & 70 μm sources. Based on the MMT/HECTOSPEC red-shift survey, IRS spectroscopy, and SDSS photometric red-shift survey, the radio sources are likely to be the extragalactic sources. Here, we use the star formation rate (SFR) derived from the MIPS 24 and 70 μm luminosity to compare the measured SFR from the VLA 1.4 GHz luminosity. These results show that a tight correlation between the SFR from the radio luminosity and the MIPS 24 μm rather than that from the MIPS 70 μm luminosity. Radio and IR correlation is also used to indicate the radio and IR properties of star-formation in the galaxies and active galactic nuclei (AGNs). Using the counterpart sources selected at IR and radio wavelengths, we employ the IR/radio flux ratios to determine the properties and population of the selected galaxies.

[구GC-14] THE CHEMICAL PROPERTIES OF PG QUASARS

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Metallicity is an important tracer of star formation in galaxy evolution. Based on the flux ratios of broad emission lines, AGN metallicity has shown a correlation with AGN luminosity. However, it is not clear what physical parameter drives the observed correlation. Using a sample 69 Palomar-Green QSOs at low-z ($z<0.5$), we determine BLR gas metallicity from emission line flux ratios, i.e., N V1240/C IV1549, (Si IV1398+O IV1402)/C IV1549 and N V1240/He II1640 based on the UV spectra from the HST and IUE archives. We compare BLR gas metallicity with various AGN properties, i.e., black hole mass, AGN luminosity and Eddington ratio, in order to investigate physical connection between metal enrichment and AGN activity. In contrast to high-z QSOs, which show the correlation between metallicity and black hole mass, we find that the metallicity of low-z QSOs correlates with Eddington ratio, but not with black hole mass, suggesting that metallicity enrichment mechanism is different between low-z and high-z.