

[GC-13] A study of blue compact dwarf galaxies at $z=0.2\sim 0.6$ and its mass-metallicity relation using SDSS DR7

Ji-Won Jung¹, Eon-Chang Sung², Soo-Chang Rey¹

¹*Department of Astronomy and Space Science, Chungnam National University*

²*Korea Astronomy and Space Science Institute*

We present a catalogue for ~ 500 blue compact dwarf galaxies (BCDs) at $0.2 < z < 0.6$ using photometric & spectroscopic data of SDSS DR7.

The measured emission line intensities were corrected for both reddening and the effects of underlying stellar absorption based on the balmer decrement measurements. We derived elemental abundances from $n_{\text{H}} \lambda_{\text{H}\beta}$ abundance based on $n_{\text{H}} \lambda_{\text{H}\beta}$ method and the empirical method. The electron number densities and electron temperatures are derived from $n_{\text{H}} [\text{S II}] \lambda_{6717} / \lambda_{6731}$, $[\text{O III}] 4959, 5007 / [\text{O III}] 4363$ ratio. Stellar masses of galaxies are determined by Starburst99 using $n_{\text{H}} \lambda_{\text{H}\beta}$ continua of optical spectra, and gas masses are from $\text{H}\beta$ luminosity and helium mass fractions.

Based on these spectroscopic analysis, We discuss spectral characteristics and the mass-metallicity relation of BCDs.

[GC-14] The integrated and internal UV-linestrength relations of early-type galaxies

Hyunjin Jeong¹, Sukyoung K. Yi¹, Martin Bureau² and Roger L. Davies²

¹*Yonsei University*, ²*University of Oxford*

Using far (FUV) and near (NUV) ultraviolet photometry from guest investigator programmes on the Galaxy Evolution Explorer (GALEX) satellite, optical photometry from the MDM Observatory and optical integral-field spectroscopy from SAURON, we explore the UV-linestrength relations of the 48 nearby early-type galaxies in the SAURON sample. For the first time, identical apertures can be used for all quantities, avoiding aperture mismatch. We show that galaxies with purely old stellar populations show well-defined correlations of the integrated FUV-V and FUV-NUV colours with the integrated Mg b band $\text{H}\beta$ absorption linestrength indices. Correlations with the NUV-V colour and Fe5015 index are at best weak. These weak relations put stringent constraints on the origin of the UV-upturn phenomenon in early-type galaxies. However, the (FUV-V)-Mg b relation originally discovered by Burstein et al. (1998), suggesting a positive dependence of the UV-upturn on metallicity, demonstrates that axial outliers in the relations are due to galaxies with current or recent star formation. Furthermore, we explore the UV-linestrength relations as a function of radius within individual galaxies and find a correlation between the FUV-NUV colour gradients and internal metallicity gradients based on Mg b linestrength.