

[KGC-41] Investigating the relation between AGN gas metallicity and their host galaxy stellar metallicity using a sample of local Seyfert 1 galaxies

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We investigate the relation between AGN gas metallicity and their host galaxy stellar metallicity using a sample of local Seyfert 1 galaxies. Stellar metallicity is measured from stellar absorption lines while AGN gas metallicity is derived from the flux ratios of UV emission lines. We use a high quality spectra obtained from the Lick AGN Monitoring Project, to obtain pure host galaxy spectra based on the spectral decomposition analysis, leading to accurate measurements of the Mg2 (5175) and Fe (5270) indices. In the case of AGN gas metallicity, we measure the ratio of NV1240 to CIV1549 lines using UV spectra from the archival IUE and HST STIS data. We will present the results of metallicity measurements and comparison between AGN and stellar metallicity, and discuss the implications of the results.

[KGC-42] Cosmic Infrared Background from the First Stars and Relic H II Regions

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We have performed the first self-consistent, large-scale simulation of cosmic reionization by stellar sources, including the Population III stars that emerged and were hosted by minihalos at very high redshifts ($z \sim 40$). Based on this result, we calculate the redshifted radiation background from these stars and the relic H II regions which can be observed at near-infrared and infrared regime. Formation of the first stars inside minihalos are quenched by radiative feedback at $z \sim 15$, while the relic H II regions have much longer lifetime due to the slow recombination rate. Therefore, the radiation output from the relic H II regions, dominated by Lyman alpha photons, will be observed both in the near-infrared and infrared regime. The estimated background from the first stars inside minihalos are still sub-dominant compared to that from stars inside larger halos, however, and thus complementary observations are necessary, such as redshifted 21-cm line observation.