X32a Exploring chemical evolution of star-forming galaxies at cosmic noon

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We present the relationship between stellar mass and stellar metallicity, i.e., the MZ_* relation, for 1336 star-forming galaxies at $1.6 < z < 3.0$ from the zCOMSOS-deep survey. We utilized a full spectral fitting with the BPASS stellar population synthetic spectra to measure the stellar metallicities that reflect mainly the iron abundance. The inferred metallicities are in a range of $-1.5 \lesssim \log(Z_*/Z_\odot) \lesssim -0.3$, showing a tight positive correlation with stellar mass. Comparing the local MZ_* relation, we found a significant redshift evolution between $z \sim 0$ and $z \sim 2.2$ with the latter showing ~ 0.8 lower Z_* at a given M_*. Furthermore, comparing the gas-phase MZ relation, we constrain the O/Fe-enhancement and found a intriguing link between the galactic archeology and high-z galaxy evolution: the evolution of the location in the O/Fe vs. Fe/H diagram occupied by local and high-z galaxies are in good agreement with the sequence of the Galactic stars. We discuss the interpretation of the observed results by using a simple chemical evolution model in which the delayed time of iron enrichment due to type-Ia supernovae is accounted for.