

X39a First detections of SiII* haloes at $z > 2$ with MUSE

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The hydrogen of the circumgalactic medium (CGM) is found to be common among star-forming galaxies at high redshifts through extended Ly α emission (e.g., Steidel+11; Leclercq+17; Kusakabe+22). The CGM is supposed to be metal enriched even at $z > 2$ from absorption line studies (e.g., Lehner+16; Muza-hid+21; Davies+22). However, this method does not provide the spatial distribution of the CGM. Recently the metal-enriched CGM has been mapped with [OII], MgII, and FeII* at $z = 0-1.5$ (e.g., Yuma+13; Finley+17; Wang+20; Leclercq+22) as well as with [CII] at $z > 5$ for massive galaxies (e.g., Fujimoto+19). At $z > 2$, SiII* can be observed with MUSE. In this project, we searched for SiII* extended emission around $N \sim 40$ individual galaxies at $z \simeq 2 - 6$ using MUSE HUDF + MXDF DR2 (Bacon+23) and got 5 detections of SiII* haloes. We also stacked a subsample of UV-bright galaxies and confirmed the presence of SiII* haloes. We will investigate the surface brightness profiles of SiII* and UV continuum and discuss photon conservation by measuring EW of resonant absorption and fluorescent emission. We will also compare those observational results with simulations in Mauerhofer+21.