

X06a The stellar populations of LAEs at $z=4.8$

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We present a study of 6 Lyman Alpha Emitters (LAEs) at $z = 4.8$, selected via a narrowband survey in GOODS North and its flanking fields by using Suprime-Cam on Subaru Telescope. Two of them are spectroscopically confirmed to be at $z=4.8$. With the publicly available IRAC data in GOODS-N and further IRAC observations in its flanking fields, we constructed the spectral energy distributions (SEDs) of LAEs from rest-frame UV wavelength to rest-frame optical wavelength ranges; photometry from 4 band images, two from Suprime-Cam (Ic- and z' -band images) and other two from IRAC ($3.6\mu\text{m}$ and $4.5\mu\text{m}$ images), is used to build the observed SEDs. Fitting the observed SEDs with the stellar population synthesis models, we derived stellar masses, ages, color excesses, and star formation rates. Assuming the constant star formation rate history, we find that the stellar masses range from 10^8 to $10^{10} M_{\odot}$ and stellar ages range from 1 Myr to 25 Myr. Although the ages are not very well constrained, LAEs are likely to be very young. The color excesses are between 0.0-0.5 mag. Star formation rates are derived to be in the ranges of 8-3000 $M_{\odot} \text{ yr}^{-1}$. Comparing with other studies of stellar populations of LAEs, we find that our derived stellar masses are broadly comparable to those of LAEs at other redshifts. We also compared the results of our sample to other studies of LBGs. The comparison to stellar populations in LBGs at $z\sim 5$ derived with the same population synthesis model shows that the distributions of stellar masses and ages of LAEs lie at the low mass end and young age end of the distributions of LBGs at $z\sim 5$.