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Galaxy Build-up and Evolution at z>=7: Early results from ultra-deep WFC3/IR observations over the HUDF and GOODS fields

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The new WFC3/IR camera aboard HST enables us to survey the sky in the near-IR data 40x more efficiently than ever before – permitting us to make enormous strides in our searches for $z \ge 7$ galaxies. Already in the first year of observations, we have deep and ultra-deep observation over 52+ arcmin**2 in legacy fields like the HUDF and GOODS. With these data, we have been able to select 80+ z < 7 galaxies, 50+ z < 8 galaxies, and even a promising z < 10 candidate. These new selections have allowed us to quantify the evolution of the UV LF and

faint-end slope from z~10, significantly constrain the stellar populations and dust properties of z~7-10 galaxies, and construct a general picture of how galaxies build up early in the universe. In this presentation, I provide a summary of some of the early results – giving particular emphasis to the implications for reionization and the global star formation rate density.

Primary author: Prof. BOUWENS, Rychard Bouwens (Leiden University)Presenter: Prof. BOUWENS, Rychard Bouwens (Leiden University)Session Classification: Session 7

Track Classification: Reionization