



# Extreme Emission Line Galaxies in CANDELS: Broad-Band Selected, Star-Bursting Dwarf Galaxies at $z > 1$

A. van der Wel, A. N. Straughn, H.-W. Rix, S. L. Finkelstein, A. M. Koekemoer, B. J. Weiner, S. Wuyts, E. F. Bell, S. M. Faber, J. R. Trump, D. C. Koo, H. C. Ferguson, C. Scarlata, N. P. Hathi, J. S. Dunlop, J. A. Newman, M. Dickinson, K. Jahnke, B. W. Salmon, D. F. de Mello, D. D. Kocevski, K. Lai, N. A. Grogin, S. A. Rodney, Yicheng Guo, E. G. McGrath, K.-S. Lee, G. Barro, K.-H. Huang, A. G. Riess, M. L. N. Ashby, S. P. Willner

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We identify an abundant population of extreme emission line galaxies (EELGs) at redshift  $z \sim 1.7$  in the Cosmic Assembly Near-IR Deep Extragalactic Legacy Survey (CANDELS) imaging from Hubble Space Telescope/Wide Field Camera 3 (HST/WFC3). 69 EELG candidates are selected by the large contribution of exceptionally bright emission lines to their near-infrared broad-band magnitudes. Supported by spectroscopic confirmation of strong [OIII] emission lines -- with rest-frame equivalent widths  $\sim 1000 \text{ \AA}$  -- in the four candidates that have HST/WFC3 grism observations, we conclude that these objects are galaxies with  $10^8 M_{\odot}$  in stellar mass, undergoing an enormous starburst phase with  $M_*/(dM_*/dt)$  of only  $\sim 15 \text{ Myr}$ . These bursts may cause outflows that are strong enough to produce cored dark matter profiles in low-mass galaxies. The individual star formation rates and the co-moving number density ( $3.7 \times 10^{-4} \text{ Mpc}^{-3}$ ) can produce in  $\sim 4 \text{ Gyr}$  much of the stellar mass density that is presently contained in  $10^8$ - $10^9 M_{\odot}$  dwarf galaxies. Therefore, our observations provide a strong indication that many or even most of the stars in present-day dwarf galaxies formed in strong, short-lived bursts, mostly at  $z > 1$ .

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