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Physical and Morphological Properties of [O II] Emitting Galaxies in the HETDEX Pilot Survey JOANNA BRIDGE, CARYL GRONWALL, ROBIN CIARDULLO, ALEX HAGEN, GREG ZEIMANN, Penn State — The Hobby-Eberly Dark Energy Experiment pilot survey identified 284 [O II] 3727 emitting galaxies in a 169 square-arcminute field of sky in the redshift range $0 < z < 0.57$. This line flux limited sample provides a bridge between studies in the local universe and higher-redshift [O II] surveys. We present an analysis of the star formation rates (SFRs) of these galaxies as a function of stellar mass as determined via spectral energy distribution fitting. The [O II] emitters fall on the “main sequence” of star-forming galaxies with SFR decreasing at lower masses and redshifts. However, the slope of our relation is flatter than that found for most other samples, a result of the metallicity dependence of the [O II] star formation rate indicator. The mass specific SFR is higher for lower mass objects, supporting the idea that massive galaxies formed more quickly and efficiently than their lower mass counterparts. This is confirmed by the fact that the equivalent widths of the [O II] emission lines trend smaller with larger stellar mass. Examination of the morphologies of the [O II] emitters reveals that their star formation is not a result of mergers, and the galaxies’ half-light radii do not indicate evolution of physical sizes.

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