

Abstract

The Hubble treasury program LEGUS (legacy ExtraGalactic UV Survey, <https://legus.stsci.edu>) has provided complete UV and optical imaging coverage of about 50 galaxies representative of the star forming galaxies found within the Local Volume. The census of the stellar and cluster populations within these targets is opening an unprecedented opportunity to study star formation from stellar to star cluster complex scales. For the first time, we are enabled to study star cluster formation in direct comparison with the underlying stellar population in a large variety of galactic environments. We find that young star clusters, similarly to globular clusters, keep in their DNA imprints of the environment and gas condition of the host galaxies where they form. I will report of the latest results produced by the analysis of the spatial and temporal distribution of stars and clusters. I will discuss statistical properties of gravitationally bound young star cluster populations (mass functions, formation efficiency, dissolution rates) and how they compare to observations of molecular cloud properties and predictions provided by numerical simulations of gas and stars in disk galaxies. I will introduce preliminary results, achieved with a pilot MUSE spectroscopic survey, that are helping us to evaluate the impact that clustered star formation plays in shaping the interstellar medium from parsec to galactic scales and as potential source of UV photon leakage from galaxies. I will conclude discussing how current and future facilities will help us to further investigate the role clustered star formation plays in regulating, via their feedback, the star formation cycle.