The Magellanic Clouds (MCs) offer a unique sample of different star-forming H II regions. Top-quality observations with today’s advanced instruments show that these regions host an outstanding variety of young stellar, pre-stellar and ‘proto’-stellar objects. As a consequence they are excellent templates for studying extragalactic star formation in low metallicity. We present the results of some of our on-going studies of this process and its products in our metal-poor dwarf neighbors.

The SMC association NGC346 is related to the brightest SMC H II region, N66. The spatial distribution of a large number of low-mass pre-main sequence (PMS) stars, discovered with deep ACS imaging (Gouliermis et al. 2006) shows the existence of significant substructure indicating the loci of recent clustered star formation. We applied two cluster analysis techniques, the minimum spanning tree and the nearest-neighbor method to identify all compact PMS clusters and analyze their structures. The detected clusters show a wide variety, ranging from strongly centrally condensed clusters (clusters A, E) to highly hierarchical clusters with multiple density peaks (clusters B, D). The Bright Main-Sequence stars are centrally concentrated also when the entire region is considered, while the PMS stars show a hierarchical distribution (Schmeja, Gouliermis & Klessen, to be Submitted). The 20th nearest-neighbor density map of NGC 346/N 66 for all PMS stars in the region is shown on the left.

Apart from the bar of N66 within which NGC346 is embedded, the area north of the association includes the most recent star formation. This area, outlined by the nebulosity as an arc-like feature, is characterized by the younger PMS stars, as well as by a high concentration of YSOs and emission-line stars (Hennekemper et al. 2008). Based on several multi-wavelength observations of the region, we propose that this arc encompasses current star formation triggered by the mechanical feedback of nearby massive objects, such as the massive progenitor of the core-collapse supernova SNR B0057–724 and/or the LBV HD 5980, which in addition to the photo-ionizing action of the OB stars of the central association shapes the current star formation in N66 (Gouliermis et al., Accepted in ApJ).

The young MS and PMS stellar content of stellar associations in MCs H II regions indicate that star formation is still active in their vicinity. Our study with Spitzer Space Telescope of the region NGC602/N90 in the SMC revealed a number of candidate Young Stellar Objects (YSOs), and the comparison of the loci of these IR-bright sources with the images from the Hubble Space Telescope (Schmalzl et al. 2008) interestingly showed that compact clusters of PMS stars are the optical counterparts of some of them, suggesting that they are not isolated massive objects but embedded young clusters (Gouliermis et al. 2007). We classified 22 sources as candidate YSOs in a 6.2’×4.8’ field-of-view centered on N90. Almost all of them are located on the rim of the H II ring, as shown (with red boxes) in the Hubble image on the left.

Publications