

SEQUENTIAL STAR FORMATION INSIDE THE YOUNG STELLAR ASSOCIATIONS OF THE MAGELLANIC CLOUDS

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While much work has been devoted to the history of star formation in the Magellanic Clouds at large spatial and time scales, little has been done on the details of sequential formation at the scale of a few 10^6 or 10^7 years and of less than 1000 pc.

Westerlund (1961) drew attention to the differences in stellar content (thus in age) between gas-rich and gas-poor associations. We present here new results on different groups of associations in the Large Magellanic Cloud and a group (N83/84/85) in the Small Magellanic Cloud. The data are from a joint stellar and nebular study (CCD photometry of the stars. CCD imagery of the nebulae, stellar and nebular spectra).

Different age criteria are discussed: morphology, compactness, excitation of the nebula, existence of molecular gas and dust; spectral types of the more luminous stars in the association; presence of peculiar types of objects (Wolf-Rayet stars, S Dor variables, Supernovae Remnants). The ability of CCD observations for the detection of massive star candidates is emphasized: these are associated with very condensed and excited nebulae. Where the gas is more diffuse or blown away, B supergiants are found.

If the subgroups with different properties formed sequentially, the velocity of propagation for star formation (mean value for the component projected on the Sky) is about 25 km s^{-1} , comparable with the values observed in the Galaxy for the major H II /Molecular Complexes, and with the value quoted for Shapley III in the Large Magellanic Cloud (Dopita, these proceedings).