

STELLAR CONTENT OF THE GIANT HII REGION NGC 604

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BVRI CCD frames of NGC 604, the brightest HII region in the nearby spiral galaxy M33, have been obtained at the Nordic Optical Telescope (Canaries Islands). The seeing was $0.6''$ which corresponds to ~ 2 pc. at the distance of M33. The magnitude of the stars were obtained using the Capella stellar photometry package (Debray *et al.*, 1989).

The $V/B-V$ diagram (Fig. 1) exhibits a narrow and well defined plume of blue supergiants and a much more sparsely populated plume of red stars. The presence of red supergiants confirms the statement by Israel *et al.* (1990) based on the strong CO absorption seen in their infrared spectra, of the presence of M supergiants in the nebulae together with the hot ionizing stars.

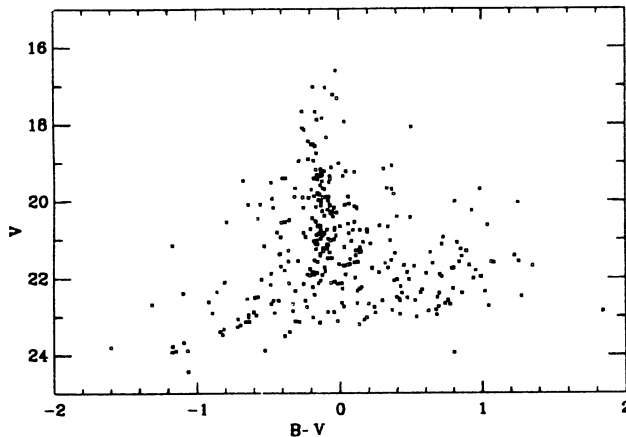


Figure 1. $V/B-V$ diagram of NGC 604.

NGC 604 contains three Wolf-Rayet stars which were once thought to be superluminous star candidates, similarly to R136a, the central object of 30 Doradus. This was first supported by Benvenuti, d'Odorico and Dumontel (1979) and then by Conti and Massey (CM, 1981) and Massey and Hutchings (1983) from IUE observations. The good seeing of the present frames points out clearly that all the bright knots inside the central core of the nebula are groups of at least a few stars (Fig. 2) as already thought by d'Odorico and Rosa (1982).

Taking the values for extinction given by Conti and Massey (1981), and assuming a distance modulus of 24.3 for M33 (Madore *et al.*, 1985), one gets the following M_V magnitudes for the Wolf-Rayet stars : CM11 : -7.9 (instead of -9.1) ; CM12 : -7.7 (instead of -9.5) ; CM13 : -7.4 (instead of -8.7), taking into account the different distance modulus

used in CM. These values are now situated in the upper tail of visual magnitudes of WNL stars (Conti, 1986). But the presence of several stellar components for each object within 2 parsecs cannot be excluded.

Similar studies are planned for other giant HII regions in M33 as well as high spatial resolution narrow band imaging to investigate further their WR content.

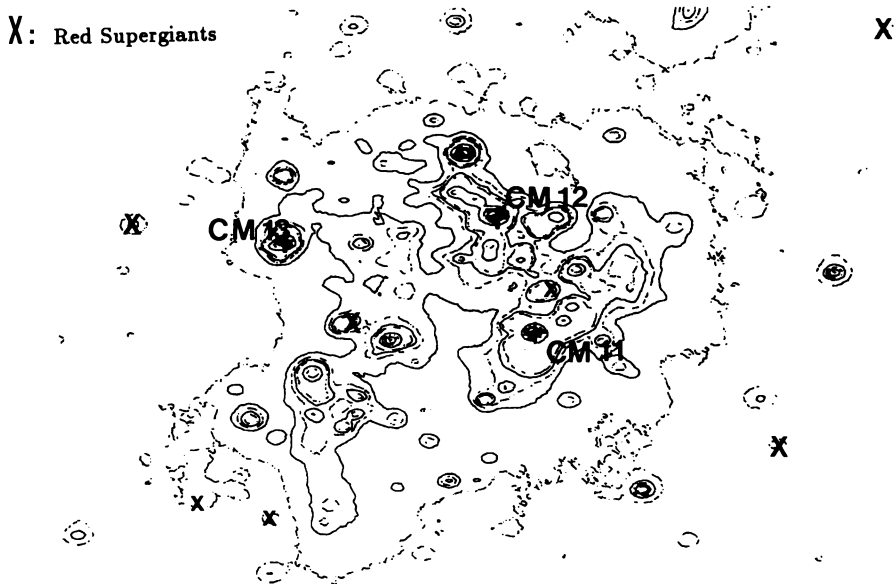


Figure 2. Isophotes of the central part of NGC 604 in V. One can see for instance clearly that CM13 is made of several components.

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