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THE KINEMATICS OF THE S-SHAPED NEBULA N 119 IN THE LMC

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We present the kinematics of the nebula N 119 in the Large Magellanic Cloud. The detailed 3D spectroscopy has been carried out in the lines of Hα and [OIII] (λ5007 Å) using a scanning Fabry-Perot interferometer. Several massive stars, including a WR star, are found near the center of this nebula. We identify for the first time a Wolf-Rayet nebula formed by a WN3 star, and a wind-blown bubble formed by an O7III(f) star. Those bubbles, together with another expanding bubble (DEML 132a), contribute to give to N 119 its peculiar spiral shape. It is suggested that the strong winds of the very massive stars have excavated the original molecular cloud where the stars of the central OB association LH41 formed.

Fabry-Perot (FP) kinematics, as the one carried out in this work using the Marseille FP at ESO (see Le Coarer et al. 1991), allowed us to identify three different expanding bubbles comprising the nebula N 119 in the LMC. The measured expansion velocities and Hα fluxes were used to estimate the mechanical luminosities involved in the expansion motions and to compare with the wind luminosities released by the central stars (Br21, a WN3+B1Ia star; HDE269357, an O7III(f) star and SDor) and kinematic ages. For further details see Ambrocio-Cruz et al. (in preparation).

In Figure 1 the bubbles 132a, WR and DEM L123 are shown. The stars Sk-69°104 of spectral type O7III(f) and Br21 of spectral type WN3+B1Ia could probably be the exciting sources of these bubbles. Indeed, we have detected for the first time a bubble around the WR star Br21, inside the N119 nebula, and we suggest that it is a WR nebula given its computed age.

N119 seems to contain three expanding bubble-shaped nebulae formed by the action of the stellar winds from Wolf-Rayet (WR bubble) and O stars (DEM L132b). Indeed, we have detected for the first time a bubble around the WR star Br 21, inside the N119 nebula and we suggest that it is a WR nebula. The nature of the largest nebula (DEM L123) is still uncertain; we suggest that it is a posible remnant of an old supernova explosion.

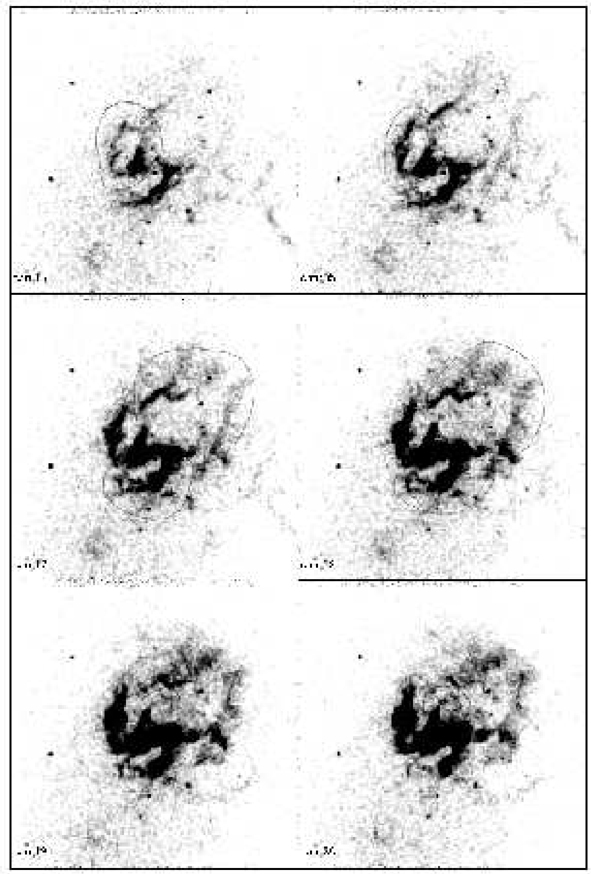

Fig. 1. [OIII] velocity channels of N 119. Channel 15 and 16 show the bubble DEM L132b; channels 17 and 18 show the bubbles DEM L132a and DEM L123 and channels 19 and 20 show the WR bubble.

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