THE STELLAR ASSOCIATION LH 99

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The stellar content of this stellar association, related to the supernova remnant N 157B = SNR 0538-691, was up to now unknown, except for three Wolf-Rayet stars and a few red supergiant candidates. A thorough study based on UBV photometry, spectra of 95 stars and nebular spectra will be described elsewhere (see also Schild et al. in these Proceedings).The outstanding properties of this region are :

A. the presence of a shell-shaped supernova, which dominates the thermal radio continuum. It is relatively faint in [OIII], strong in [SII], [Fe 4658] and He II 4686. The expansion velocity reported by Chu and Kennicutt (1988) is 180 km/s. In addition, many extensions and filaments are found all over a wide area, and possibly there has been more than one supernova responsible.

B. the existence of about 40 newly discovered O stars including three O3-4 unevolved stars .

C. the WR stars are of type WN7 (Brey 71, Brey 73) and WN3-4 with strong C IV 5812 emission (Brey 70a = MGWR 4, Morgan and Good, 1987). An extreme Of star has just been discovered near Brey 73 (Testor and Schild, 1990).

D. the physical boundaries of the association are quite uncertain. A star concentration 3 or 4' in maximum size (NS) is clearly seen near the SNR, it is surrounded by an obscure corona, itself limited by a conspicuous SE-NW ionization front.

Brey 70a is outstanding by its high luminosity (M_{bol} about -10.0), high reddening, strong and wide lines, and a strong CIV 5812 line, only found in WN/WC stars, such as Brey 29 and Brey 72 in the LMC.

We are exploring the idea that the apparent star concentration containing the brightest parts of the SNR, Brey 73, TSWR 3 and several hot stars is real and distinct from the surrounding areas where hot O, WC, WNE and red supergiant candidates are scattered in a large volume, possibly at different depths along the line of sight.These may span a large range in ages, exactly as is found slightly to the North in the 30 Dor Nebula.

REFERENCES

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