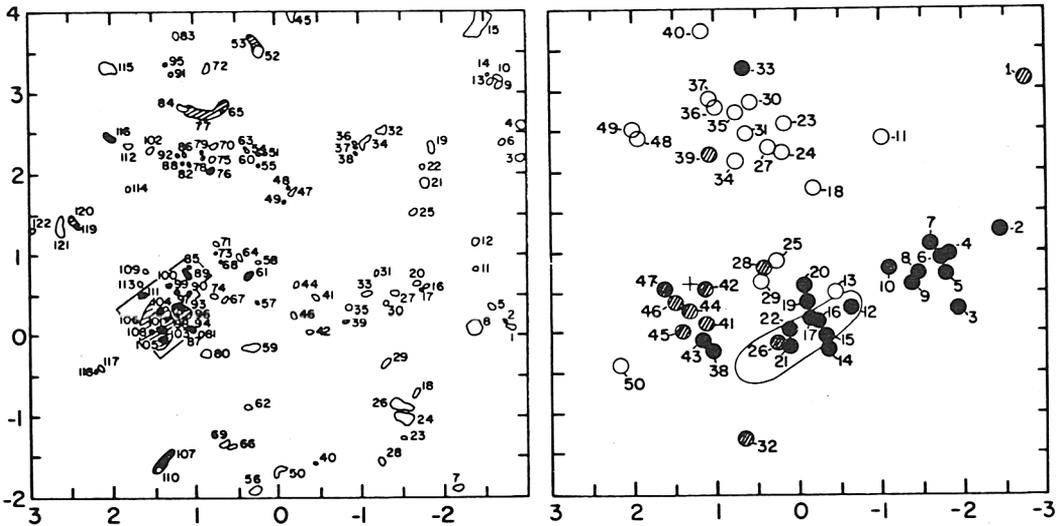


ULTRAVIOLET SURFACE PHOTOMETRY OF STELLAR ASSOCIATIONS IN THE
LARGE MAGELLANIC CLOUD

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Observations of the Large Magellanic Cloud obtained with the 10-channel ultraviolet photometer of the OAO-2 are presented. The aperture was circular and 10 arcmin in diameter whereas the wavelength coverage was from 4250 to 1430Å. A total of 50 fields has been measured. Using photometric criteria, the data fall into three groups which are also spatially separated. The different characteristics are easily understood in terms of population and reddening differences, but only if the previously reported "LMC extinction law" (Koornneef and Code 1981; Nandy et al. 1980) is adopted.



A chart outlining the OB associations listed by Lucke and Hodge (1970). The fields in the rectangular box around 30 Doradus were measured with ANS and discussed by Koornneef (1978).

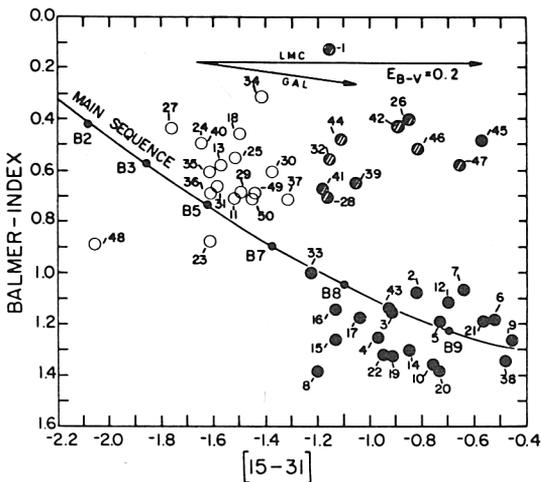
The circles represent the positions of the fields measured with OAO-2. The oval outlines the brightest part of the LMC-bar. Open and shaded circles represent OB-associations, filled circles correspond to a more evolved population.

The bluest group comprises fields of the Northern Constellation Sh. III. These fields are only moderately reddened ($E_{B-V} \approx 0.15$) and the observed energy distribution is consistent with a Sandage-Salpeter Initial Luminosity Function (ILF).

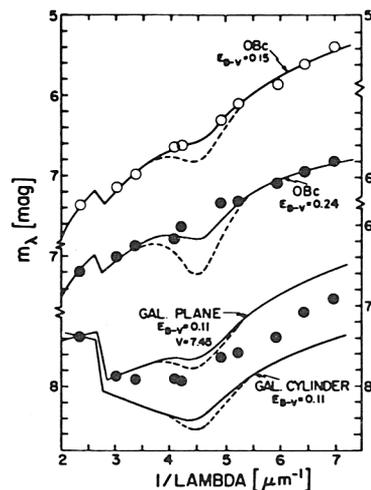
The same ILF has been adopted for the stellar associations in the 30 Doradus region. But the ultraviolet colours observed here are significantly redder which is explained by a higher amount of dust.

The third group is dominated by the fields observed in the "Bar" of the LMC. The far-ultraviolet slope observed here is similar to the two other categories, but the far to near ultraviolet flux ratios are much redder. Also, this group exhibits a more pronounced Balmer discontinuity. A slightly reddened solar-neighbourhood luminosity function is found to be appropriate.

A full account of this work will be given elsewhere.



The ordinate is an OAO-2 photometric parameter which mimics the strength of the Balmer discontinuity. The colour-index on the abscissa is a measure of the slope shortward of the Balmer-jump. Note the gap in this diagram between the OB-association and the evolved population indicating spatial separation. Galactic and LMC reddening vectors are shown.



The final results of the model fluxes as fitted on the overall flux distributions observed for the three categories. The broken line indicates the predicted 2200Å feature for a galactic reddening law.

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