BRIGHT STARS IN THE SMC CLUSTERS

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The bright stars for 15 SMC clusters were classified in order to derive the distribution of various spectral types. The studied clusters represent all evolutionary ages (disk, intermediate and halo) and are located at various places of the parent galaxy. The spectal classification of the stars was carried out using film copies of the 1.2 m Schmidt tele-scope objective prism plates. Low dispersion (2440 Å at H_γ) and medium dispersion (830 Å at H_γ) unwidewed UJ and RI spectra were examined by means of a binocular microscope. Short exposure plates were used as well for the most bright stars and particularly for the stars at the central areas where crowding is more severe. More details about the used material and the criteria used for the classification are described by Kontizas et al (1985). For each cluster a circular area was examined inside its tidal radius. (Kontizas, 1984).The stars in the innermost part of the populous clusters were not classified because of the overlapped images. Stars of fields in the vicinity of each cluster were also classified to find the contribution of field stars in the cluster area. The mag-nitude range of the studied stars is $14.5 < V < 17.50$.

Fig. 1, shows the number of stars per spectral type for (a) the seven halo clusters, (b) the three intermediate and (c) the five disk clusters respectively. The stars classified as B represent stars O, B and A spectral types since the ma-terial used does not permit us to distinguish them. The da-shed line represents the distribution of the various spectral types of the adjoining fields normalised to the cluster area.

From these diagrams it can be seen that for the halo and intermediate clusters the bright stars are mainly M   stars whereas for the disk clusters they are almost equally distri-bution into B and M stars.

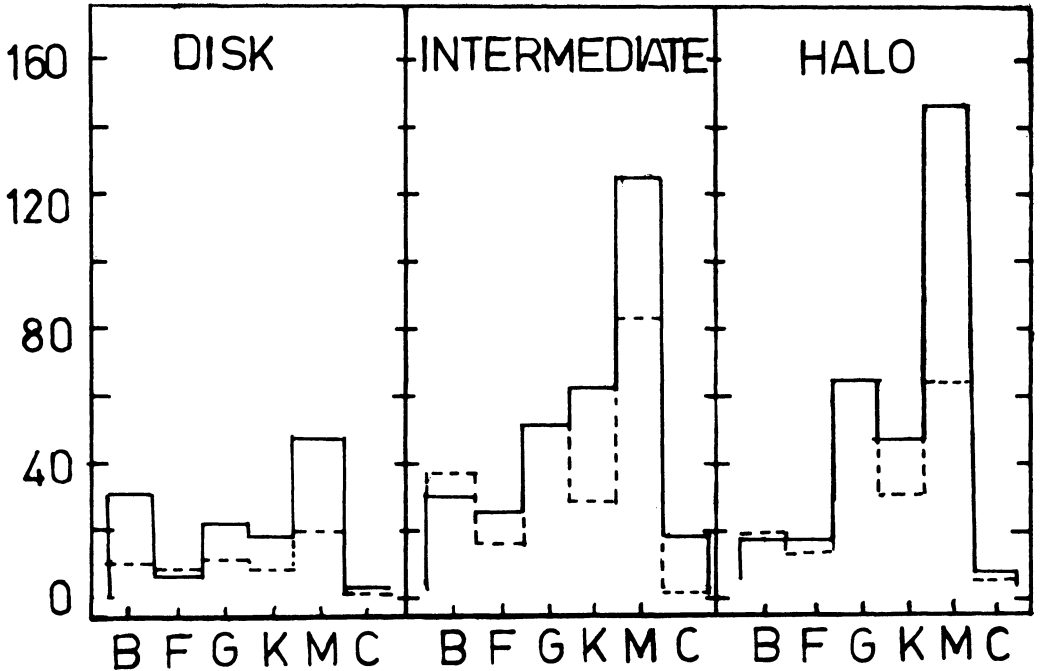Another interesting result that comes out from these dia-

Figure 1. Number of bright stars per spectral type (solid line) for (a) disk (b) intermediate and (c) halo SMC clusters and their adjoining fields (dashed line).

grams is that the carbon stars are mainly found in the intermediate age clusters, as it is expected.

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References

Kontizas, E., Dapergolas, A., and Kontizas, M. : 1985 (in preparation)
Kontizas, M. : 1984, Astron and Astrophys., 131, 58.