DISENTANGLING INDIVIDUAL STAR AND CLUSTER CONTRIBUTIONS IN IUE SPECTRA OF MAGELLANIC CLOUD GLOBULAR CLUSTERS

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The globular clusters NGC 1786 in LMC and NGC 121 and 330 in SMC have been observed in UV with IUE, both in the long and short wavelength range, in the low dispersion mode. The spectra show stellar component(s) superimposed on the cluster contributions.

New test extraction software, recently developed at the ESA-IUE Tracking Station in VILSPA, with a spatial resolution two times better than the resolution provided by the standard extraction software, has been applied to the spectra in order to disentangle the stellar and cluster contributions. A multiple-gaussian fitting technique then was applied to the line-by-line spectra averaged over bands 100Å wide. The FWHM of the gaussian profiles representing the stellar contributions were fixed on the basis of previous studies of the point spread function (Barbero and Cassatella 1983). An exemple of the fitting for each cluster is shown in Figure 1.

The energy distributions for the stars and clusters have been derived at 100Å intervals. A short summary of the estimated stellar characteristics is given in Table 1. These estimates have been obtained by comparing the observed flux distributions with Kurucz' (1979) model atmospheres taking into account the results by Zinn (1974) on Population II UV-bright stars (for NGC 121) and by Robertson (1974) (for NGC 330). No reddening correction has been applied to the derived energy distributions, since they are consistent (in first approximation) with a reddening value smaller than 0.05 mag.
For more details reference should be made to the main paper, in preparation.

REFERENCES

Barbero J. and Cassatella A., 1983, Report to the IUE 3-Agency Meeting, London.
Kurucz R.L., 1979, Astrophys. J. Suppl. 40, pp. 1.
Robertson J.W., 1974, Astron. Astrophys. Suppl. 15, pp. 261.
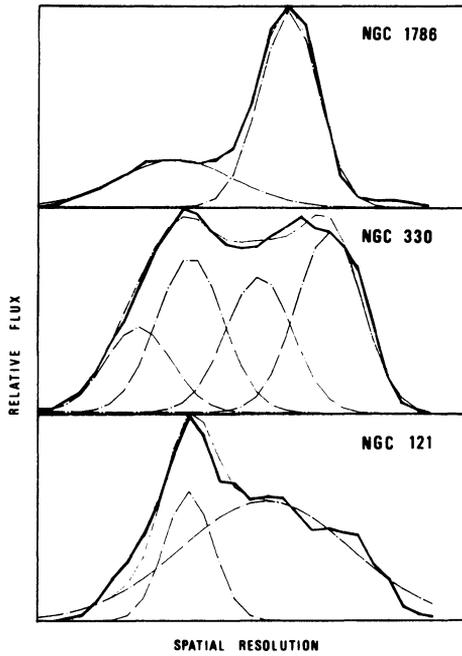Zinn R., 1974, Astrophys. J. 193, pp. 593.

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Figure 1. Multiple-gaussian fitting applied to the line-by-line spectra. The thick lines represent the observed cross-sections of the spectra, the thin lines represent the total reconstructed profiles and the profiles of the single components.

Table 1

Star ID	Sp.Type	Teff	log g	V	Comments
1786	F0-F5 IV-V	7000	4.5	12.0	Field star
121	UV-bright	30000	4.0	19.0	Member?
330 # 1	A1 I	12000	2.5	13.0	Member
330 # 2	B9 I	13000	3.0	12.7	Member
330 # 3	B1-B2 I	15000	2.5	13.4	Member
330 # 4	B0 I	20000	3.0	14.2	Member