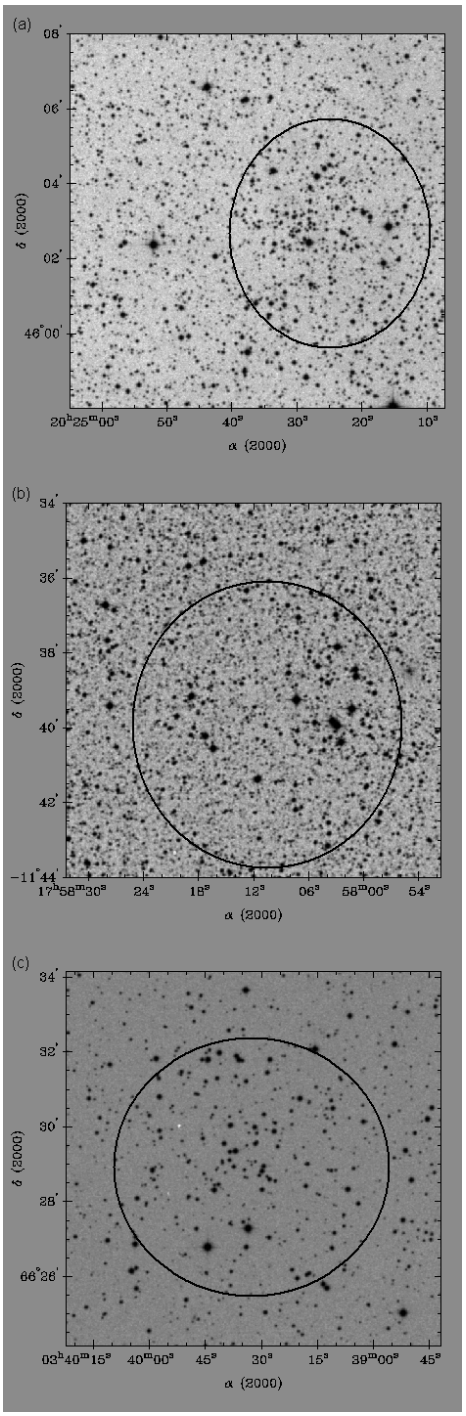

Fig. 1. DSS red-filter images of the Galactic open clusters Be 89 (Panel a), Ru 135 (Panel b), and Be 10 (Panel c). The regions analyzed with the ELIPSE inspection tool, to derive first estimates for the fundamental parameters, are enclosed by ellipses. Orientation as usual: north is up, and east to the left.

clusters rather than using the full-frame CCD images; this has been accomplished by using the ELIPSE or SAFE programs, described above. These have been used to select an elliptical, or polygonal area (with as many as 10 sides), centered on the open cluster as seen in a V or R image, excluding stars outside this area from further analyses. (See Figure 1). These interactive analyses greatly increase the contrast of cluster members with respect to the field stars, and thus the scatter in the CM and CC diagrams is significantly reduced.

Also, the observational errors, e.g., $\sigma_{(U-B)}$, of these three clusters have been considered as a criterion in selecting the more reliable data for further analyses. The values of $\sigma_{(U-B)}$ are almost always larger than the ones of $\sigma_{(B-V)}$ due to the smaller sensitivity of the CCD in the ultraviolet, and the errors $\sigma_{(R-I)}$, $\sigma_{(V-I)}$, and $\sigma_{(V-R)}$ are among the smallest. The observational errors, such as $\sigma_{(U-B)}$, $\sigma_{(B-V)}$, and $\sigma_{(B-R)}$, have been selected to be less than $\approx 0\overset{\mathrm{m}}{.}10$ (and sometimes $\lesssim 0\overset{\mathrm{m}}{.}05$) in some of the diagnostic diagrams presented in the analyses to follow, such as the $(U-B,\ B-V)$, $(V,\ B-V)$, and $(V,\ B-R)$ diagrams.

Interstellar reddenings of the program clusters have been estimated from shifts of the intrinsic-color sequences of SK82 in the $(U-B,\ B-V)$ diagram, until the best fit to the data of the clusters was achieved: along the $U-B$ axis by $0.72\ E(B-V)+0.05\ E(B-V)^2$ and along the $(B-V)$ axis by $E(B-V)$. For this, F-type stars have been fitted above the main sequence of SK82 [i.e., blue-ward in $(U-B)$], and simultaneously the red-clump stars above the red-giant colors of SK82 with consistent ultraviolet excesses according to the normalizations of Sandage (1969). The two-color sequence of SK82 has been constructed from the intrinsic colors of SK82 for zero-age dwarfs [$(B-V)_0 \lesssim 0\overset{\mathrm{m}}{.}75$] and for giants [$(B-V)_0 \gtrsim 0\overset{\mathrm{m}}{.}75$].

Once the two-color sequence of SK82 has been fixed as indicated above, to determine the photometric metal abundance, [Fe/H], one first locates the F-type stars in the $(U-B,\ B-V)$ diagram and compares their location with that of their counterparts of known metallicity (e.g., the SK82's ZAMS calibration). Deviations between the two are due mainly to their differences in metal content, an ultraviolet excess, $\delta(U-B)$, being caused by differences in line blanketing. The metal-deficient F-type cluster stars, if present, lie blue-ward of the "hump region" of the ZAMS sequence, where an eyeball-fitted osculating curve similar to "the hump" has been fitted to the data points of the F-stars (i.e., the thick line above