Fig. 2: *The residuals of photographic and photoelectric measurements versus the red and blue surface brightness is given in the upper and lower diagram respectively. Data points represent data of ~ 20 galaxies in the field 358. The dispersion is larger in the blue colour due to the higher noise in the IIa–O emulsion used for the QBS.*

Fig. 2 and shows a mean residual less than $0^{m}08$ for the red surface brightness and $0^{m}12$ for the blue surface brightness. The final photometric system will be determined through a study of $m_{pg} - m_{pe}$ residuals of all B and R plates simultaneously. The dotted line in the flow chart in Fig. 1 represents this "loop" in our calibration. Providing a catalogue with standard galaxies and the list of coefficients of the characteristic curve can be considered as the first two products of our project.

The Automatic Parameter Extraction

Once the characteristic curve coefficients of a plate have been determined, the images of the galaxies are converted from density into intensity and are ready for further analysis. Using a sequence of software routines the following is obtained in one main programme. First a version of the programme INVENTORY is run which detects and classifies all objects present in a single frame of a target galaxy and whose surface brightness exceeds that of the sky by a factor two. On average about 20 such objects are found per frame and their positions, magnitude and classification are calculated using a reference point spread function. The data are stored in a separate disk file for later investigation. In the future this data bank will be used to search for peculiar objects, such as quasars and novae, in the neighbourhood of the target galaxies. For instance, an automatic survey of objects with a certain colour excess will be feasible. The INVENTORY programme finally creates an image with all neighbouring objects subtracted from the input image. Next, as a first step in a string of our own routines, which we have called AND, the sky brightness distribution is approximated by a plane using 8 surrounding subregions, four of them being close to the corners. After the subtraction of the sky we are finally set to extract the photometric and structural information from the images. Radial B, R and B–R profiles are stored in the disk catalogue together with overall elongations and position angles from an octants comparison. For elliptical and SO galaxies ellipses are fitted to the isophotes determining the