to be constant in time. Therefore, the more images of a given field in the database, the more accurate the calculation of c_i. Ideally, after a large number of images are obtained, c_i is essentially determined only by the errors in image i. Also, with this technique we are able to compare the QSO intensities between two epochs even if the images in each epoch do not share any common comparison stars, as long as another independent image exists which contains comparison stars from both epochs.

Data from the KPNO #1-36" and/or data taken with filters other than $R_s$and V2 may have large systematic errors relative to Lick 1 meter images. Therefore, these points have been included in such a way as not affect the Lick ($R_s$or V2) light curves. The light curve is calculated with the Lick ($R_s$or V2) data, and then the KPNO images are scaled using the Lick (R_s or V2) data as reference points. Comparable filters to R_s include r1 and R2, while the Mould V filter at KPNO is similar to our own V2 filter. These points will appear as open symbols in the light curve graphs shown in the following chapter. None of the error analysis below will include the non-Lick data.

An example of the above computations showing graphically the final residuals in the fit for the CSO 203 field is shown in figure 7-4 . This is a plot of the values $c_i s_{ij}$ for all the stars in all the images. The triangles mark the rejected data points ($w_{ij} = 0$). The open symbols represent non-Lick (R_s or V2) data points. Note that the brighter stars form a tighter bunching, due both to their higher weights and more accurate intensity values.

7.4 Estimation of Non-Formal Errors from Deviations in the Light Curves

The same method described above for producing the QSO light curves can be used to produce light curves for any of the comparison stars in a field using the other comparison stars. The one difference being that the light curves for the stars will have one less comparison star since the QSO itself cannot be used as a comparison star.

Since we have assumed that the flux of the stars remains constant to well within our detection limit, we can use the deviations in the star light curves to estimate the true error in our measurements and processing. The non-formal errors can be derived by