case, $\chi^2 = \sum(f_i - m_i)^2/\sigma^2_{f_i}$ , where the sum is over epochs (*i.e.* different nights) and $m_i$ is the precision weighted mean of the light curve points $f_i$.

Figure 7-8 shows an *anonymous* sample of comparison star light curves. The one criterion used to select these stars was that the star should have data for at least three epochs. The probability (P) that the points arise from a constant flux (assuming a normal distribution for the errors and using the $\chi^2$ value) is shown in the lower-left of each plot.

Figure 7-9 shows a sample of simulated light curves generated assuming a normal distribution for the errors. By studying these plots we can estimate the selection effect by which the reader will tend to pick out patterns in a random distribution of points. These simulated light curves are similar to the comparison star light curves except that they tend to lack the "outlayers" which tend to occur in the real data.

To identify possible variable stars and/or stars with excessive systematic errors we "scrutinized" the comparison stars with P$<$ 0.0001 (30 out of 563). Of these, 15 were considered to be bad comparison stars because of their proximity to other sources, the edge of the CCD, or bad columns on the CCD. Two stars were noted as possibly being intrinsically variable. These 17 stars were rejected from the database, and all the QSO light curves were recalculated.

In the top two graphs of figure 7-10, we show the distribution of P for all the comparison star light curves with more than two epochs. The dotted line is the distribution expected from a sample of simulated light curves generated with random fluctuations about a constant flux. The deviation of the errors from a normal distribution causes the excess of probabilities at both the low and high ends, indicating the problem of applying the $\chi^2$ statistic to our data set. The rise in the histogram at the left end of the top-left graph indicates that we have underestimated the error for some stars, while the rise at the right end of the same graph shows we have overestimated the errors for other stars.

In the bottom two graphs of figure 7-10 , the distributions for all QSOs with more than two epochs are shown ($R_s$ observations only). The excess of low probabilities is evidence of the variability of the QSOs relative to the comparison stars. For a fair comparison