

of figure 12–3, will show that these groupings are somewhat arbitrary, and may be biased by personal study of these QSOs during this project.

The 23 BAL-monitored QSOs are shown in figure 14–1 as a function of redshift and maximum deviation in magnitudes from the broadband monitoring. Category one objects are marked as stars, category two as solid squares, category one as open squares, and category 0 as X’s. 0019+0107 was downgraded to category 1 since the large BAL changes occurred prior to our broadband monitoring. 1423+5000 was downgraded to category 2 since the largest BAL change occurred in spectral data which we did not have direct access to.

In the lower plot of figure 14–1, we show the broadband magnitude deviation between the two epochs where the BAL changes (or limits on) were determined. Some objects did not have broadband observations at the same epoch as either or both of the spectral observations, so not all the points are repeated. The significance limit over all epochs is probably about 0.1 magnitudes, in the lower plot it is probably about 0.07 magnitudes.

It appears, in figure 14–1, that the most variable BALs tend to occur in objects which also show at least some broadband changes during the broadband monitoring. In the lower plot, we see that some BAL changes occur at the same time as broadband, yet there are a few notable exceptions.

Our general conclusion is that BAL changes appear to be somewhat correlated with continuum changes, although there may be some delay and/or difference in level between the variability mechanism and the observed continuum. The simplest conclusion, at this point, is to assume that ionizing flux changes induce the BAL changes, but that the far UV/ soft X-ray continuum is not necessarily in phase (either in timing or amplitude) with the continuum changes. However, we cannot rule out entirely other possibilities for the variability mechanism, such as relativistic particles or “shocks” (see BJBWMK). However, these phenomenon must be propagate through the BALR at speeds near  $c$ , and must induce ionization level changes similar to those predicted by photoionization.