

We note that it is not yet clear whether microlensing occurs often enough to have a noticeable effect in QSO variability studies. The fraction of QSOs with readily detectable “macro” lensing appears to be only $\sim 1\%$. The *HST* Snapshot Survey (Maoz *et al.* 1993) has found 3 to 6 candidates for gravitational lensing out of 502 QSOs. This frequency is in general agreement with theoretical calculations. Unless it is possible for microlensing to affect a substantially larger fraction of QSOs than those which show obvious “macro” lensing, microlensing will not have a strong effect on variability studies.

8.5.4 : Luminosity Dependent Variability

Since luminosity and redshift are correlated in our sample, we must consider the possibility of luminosity dependent variability. We might expect correlations between luminosity and the amplitude, the frequency, and/or the timescale of variability. These may be due to more luminous QSOs being more active, younger, or having a systematically different viewing angle (*i.e.* angle between the line-of-sight and the plane of the hypothesized accretion disk or obscuring torus).

One early model for QSOs was the “multiple-component” model in which the intrinsic luminosity increases with the number of components which contribute to the total QSO flux. If the components vary independently (or the light-travel time-delays are large between components), then variability should decrease with luminosity since the change in any given component represents a smaller change in the total flux as the number of components increases. The amplitude of random variations should decrease as the square root of the number of components and therefore the square root of the intrinsic luminosity (see Pica and Smith 1983 and references therein). The lack of any decrease in variability with luminosity in our data is an argument against this model.

8.5.5 : Selection effects in magnitude limited surveys

If the magnitude limit for a survey is brighter than the mean magnitude of QSOs at a given redshift, then the more variable members will have a better chance of being identified. At high redshift we are sampling the more luminous part of the luminosity