spectra (averaged after matching continua) over all epochs. Although, in principle the same (small) continuum regions would be used with both methods, the "instability" of multi-component fits means a larger potential for error.

Prior to fitting the continuum adjustments, a "template" spectrum was made for each epoch by re-binning the higher resolution spectrum averages to the low resolution spectrum average, and averaging across resolution categories. At this point, the emission redshift was determined by using the emission lines C III] λ1908 and C IV λ1549, except for 0946+3009 (Mg II λ2800) and 1700+5153 ([O II] λ3727). A combination of first moment centroiding and gaussian fitting was used to get the emission line centers. Using these redshifts, it was possible to predict the position of weaker emission lines and thus better estimate which portions of the spectra best represented the "true" continuum. These redshifts were also used for the analysis in the following chapters.

A single epoch was chosen with the best S/N and wavelength coverage, and this epoch's template was divided by each other epoch's template, in turn. By visual inspection of these divisions, it was possible to determine variability of small features within the spectra and better estimate the continuum regions; *i.e.* "real" variations show up as sharp changes over small wavelength ranges, while the continuum regions follow a relatively smoother function. As before, the divisions were fit with low-order polynomials.

11.4 : Flux Calibration Errors

The continuum matching process can become very difficult due to poor calibration of the spectrograph response function. Bad response functions were particularly a problem for data reduced prior to about 1990 (see §10.3). There are at least four causes of bad flux calibration. (1) Bad fits (response versus wavelength) to the calibrated standard star magnitude points– this improved dramatically after 1990. (2) Light loss due to differential atmospheric refraction when the slit is not aligned in the direction of this refraction (see Filippenko 1982). (3) Changes in the spatial profile of the object as a function of wavelength caused by uneven focusing. This is problem since the columns