11.2 : Continuum Matching Within an Epoch and Spectral Averaging

Due to inaccurate flux calibration, light loss due to differential atmospheric refraction, and changes in photometric conditions, the overall shape of the spectra differ among observations made during the same observing run. We have attempted to correct these variations in order to accurately average the spectra and make it possible to fit a single continuum function which can be applied to the average spectra within each resolution category.

We first matched the lowest resolution, widest wavelength coverage spectra to any available large aperture observations. This corrected for any light loss due to differential refraction. These low resolution spectra were averaged and then used as a "template" for the higher resolution spectra. Assuming that the "true" spectrum remain identical within an observing run (*i.e.* no variations on timescales $\lesssim$1 day), we divided the template by the higher resolution spectra and fit a low order polynomial (order$\lesssim$3). Each spectra and its corresponding error array was multiplied by this correction fit.

The spectral averaging was done with pixel-by-pixel weighting by the inverse variance of each pixel. Points which were affected by bad pixels (CCD defects and radiation events) were weighted zero.

11.3 : Continuum Matching Between Epochs

In order to study the changes between epochs and to make it possible to use a single continuum fit for all epochs, we have chosen to calculate the "continuum adjustment function" between epochs. This function is simply a spectrum which when multiplied into a spectrum of a given epoch, matches the continuum shape to the spectrum of another epoch. The differences in spectral shape in this case may be caused by "real" variations, as well as the other problems mentioned above. Of course, it is possible to compare spectra between epochs by fitting a continuum in each epoch and then comparing the normalized intensity spectra; however, we felt is was better to fit low-order polynomials for each continuum adjustment, then fit a multi-component continuum to the average