

(3) A larger field will enable larger changes in telescope position between exposures. This should transfer some of the night-to-night errors to image-to-image errors. Since adjacent images will be (more) independent, the signal-to-noise can be increased by the square root of the number of adjacent images. (Note that  $\sigma_{AE}^2$  derived above was added in quadrature to the variance of the average of all the images in a given night.)

(4) More comparison stars will also mean a much improved PSF for each image, which provides the possibility of an optimal weighting scheme per pixel (rather than just per aperture). This will also reduce the pixelation error. (Actually a variety of schemes, multi-aperture, etc., should be used at reduction time and the results archived for future analysis). This will mean the same signal-to-noise is possible in a shorter exposure, which implies more exposures can be taken with the subsequent reduction of non-formal errors.

(5) The CCD used should have a reasonably fast readout ( $\lesssim 40$  seconds) in order to efficiently take many exposures of the brighter QSOs ( $V \lesssim 17$ ) with a 1 meter class telescope. Smaller pixels (i.e. fewer arc-seconds per pixel) would improve the PSF calculation and the rejection of CCD defects and high energy radiation events. Smaller pixels would also reduce the gradient across individual pixels which can contribute an additional error due to the non-uniform sub-pixel response of the CCD.

(6) Color/airmass corrections between the stars and QSO can be applied if the color-color ratios and/or spectral types are known for the comparison stars. This requires multi-band observations of each field (on at least one night) under photometric conditions.

(7) Errors due to deferred charge effects of isolated pixels may be important, and it is possible to correct for this effect. To do this requires flat-field images with a variety of exposure times in order to create a deferred charge map or image (*cf.* Gilliland 1992).