Test of CANON 350D CMOS chip

13 images were obtained of a fixed evenly illuminated piece of white paper using a Canon 350D digital camera, which is fitted with a CMOS detector. The image format was CR2 which is a 'RAW' mode and does not compress image information, like JPEG does. The aperture was fixed and exposure times from 1/30 s to 30 seconds were employed. The images were converted to FITS format with AstroArt and analyzed with IDL.

The analysis consisted of extracting the R,G and B fields from each image and selecting a square area in each image (the same square in all images). In the square area the mean and variance of the pixel values were calculated and tabulated. The table was inspected fro saturated cases, and these were omitted from further analysis. Values of mean and variance from R, G and B planes were combined into one list of means and variances.

The linear plot of means against variances show a curved line with little scatter.

At left is a log-log plot of means and variances.

The red line is a linear least squares regression fitted tolog values. The fitted line has slope 1.84 and intercept -1.716, in log space.

The blue line shows the diagonal of equal ordinate and abscissa values.

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