

2.5 SHUTTER OFFSET LINE DEVIATION

Subsystem calibration analysis for shutter offset showed increased offset values in a horizontal band through the middle portion of the image area for both the NAC and WAC FM (see Figure 2.5-1 and Figure 2.5-2 for WAC example). This, of course, was unexpected because the translation of the shutters is along the line (x-axis direction). Data did not support a skewed shutter mechanism : the offset was higher only in the mid-section of the image (the offset at the top and bottom of the image agreed relatively well). No cause for this anomaly has been found to date, although it is suspected that perhaps the bias level line variations were not properly accounted for. This suspicion is prompted by subsequent bias frame analyses showing a somewhat similar bias level versus line profile variation in Gain State 3 (same gain state used for shutter offset data set) where the bias level difference at various temperatures were compared. Also, the WAC light leak test, taken in Gain 3, exhibited a similar profile when shutters were restricted to the “reset” position and low exposure images were taken. Note that the subsystem level shutter offset calibration results (reported in Section 5.1.1) discusses expected offset results when the analysis software was restricted to the top 250 lines.

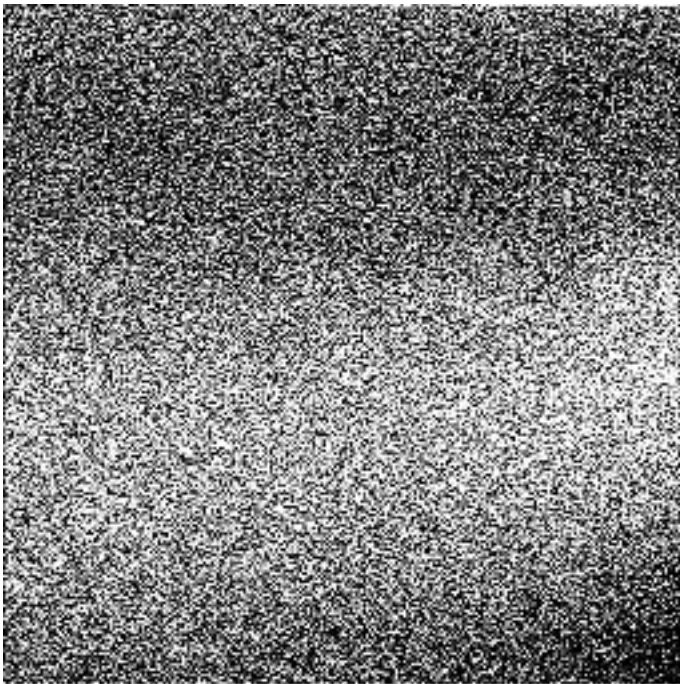


Figure 2.5-1 Shutter Offset Column Variation Image (shown for the WAC)

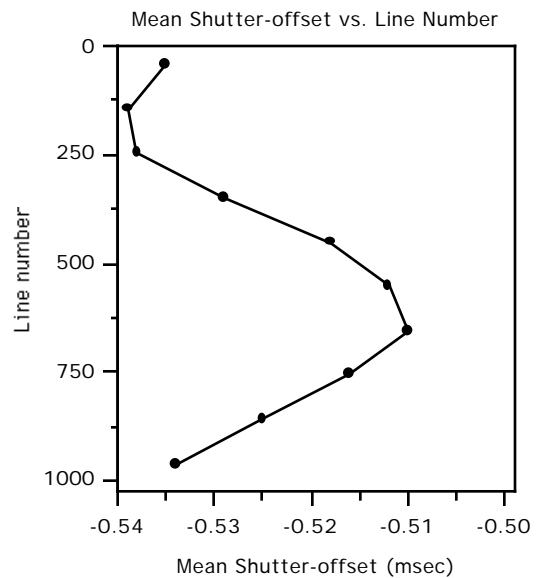


Figure 2.5-2 - Shutter Offset Column Variation Plot (shown for the WAC)