Detecting anomalous pixels and correlated artifacts in digital detectors from flat-field images

All processing were performed in Matlab (Mathworks, Inc., Natick, MA)

**Representative Case:** Anomalous pixels and line artifacts were identified correctly.

The grayscale image at calibration setting is shown (at default window width and level) with the insets representing the regions (100mm²) zoomed to 800% to see the anomalous pixels (inset-above) and the line artifacts (inset-below). The pseudo-colored image from the program's output represents the anomalous pixels (denoted as asterisks) and the line artifacts (in white).

The left-side image below, is a zoomed-in version of the program's output image (pseudo-colored image above) - it illustrates the cluster of anomalous pixels that are seen as an aggregated group in the inset on the grayscale image. The right-side image below is a zoomed-in version again of the program's output image – it illustrates that rows 1420 through 1423 comprised the line artifacts seen in the above images. Note, row numbers correspond to the image after 10 mm borders were eliminated; thus true detector row can be identified by adding the offset depending on the pixel dimension.