

## **Why You Should Care About Area Detectors – An Introduction**

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The Army Research Laboratory Materials Analysis Group has used an area detector to appreciably speed up and simplify the analysis of electronic device prototypes. In this poster we will compare raw area detector data and traditional, intensity vs. position (I vs. P) x-ray scans and provide examples to help further explain how the system's abilities can complement those available from traditional I vs. P scans. Additional topics to be covered will include augmented phase discrimination, quicker more unequivocal initial qualitative texture analysis (which is particularly useful with more complex samples), off axis and off cut problematic samples, planar relationships between substrate and film, poor man's Laue, and intensification of a number of classes of weak x-ray signatures. Area detector system capabilities have proven themselves to be useful over a wide range of unknowns, becoming a welcome addition to the interesting and challenging job of understanding and documenting a project material's structural components, helping to provide clarity, as to what has actually been accomplished, and where things are headed.