

# Deep sub electron noise readout in CCD systems using digital filtering techniques

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Scientific CCDs designed in thick high resistivity silicon (Si) are excellent detectors for astronomy, high energy and nuclear physics, and instrumentation. Many applications can benefit from CCDs ultra low noise readout systems. The present work shows how sub electron noise CCD images can be achieved using digital signal processing techniques. These techniques allow readout bandwidths of up to 10 K pixels per second and keep the full CCD spatial resolution and signal dynamic range.

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