

Influence of electron dose rate on electron counting images recorded with the k2 camera

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Supporting Information Inventory:

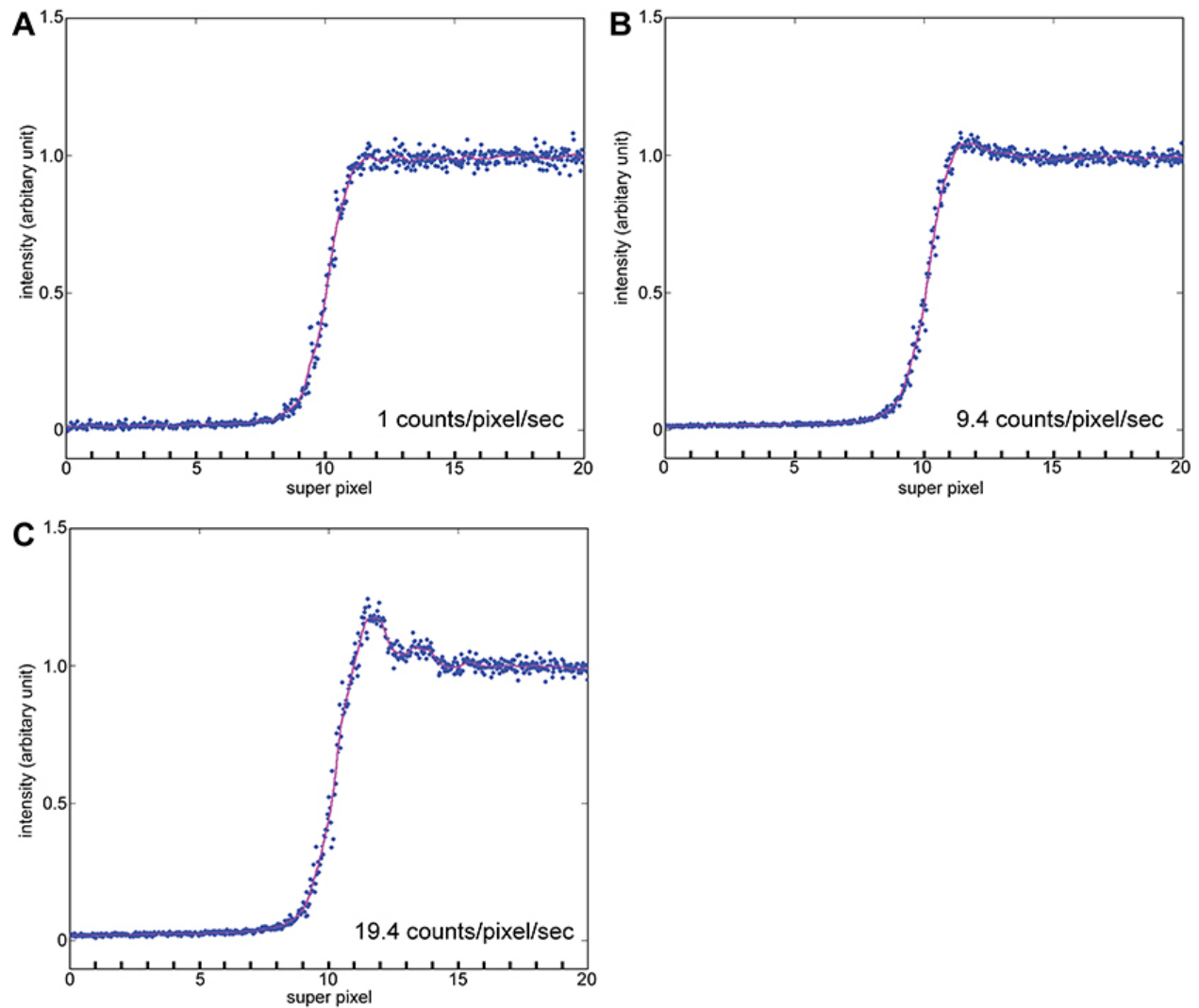
Figure S1. Line profiles of knife-edge image recorded with the K2 Summit at different dose rate.

Figure S2. Simulations suggest possible options to improve the linearity of DCE curve.

Figure S3. Fourier Shell Correlations of 3D reconstructions.

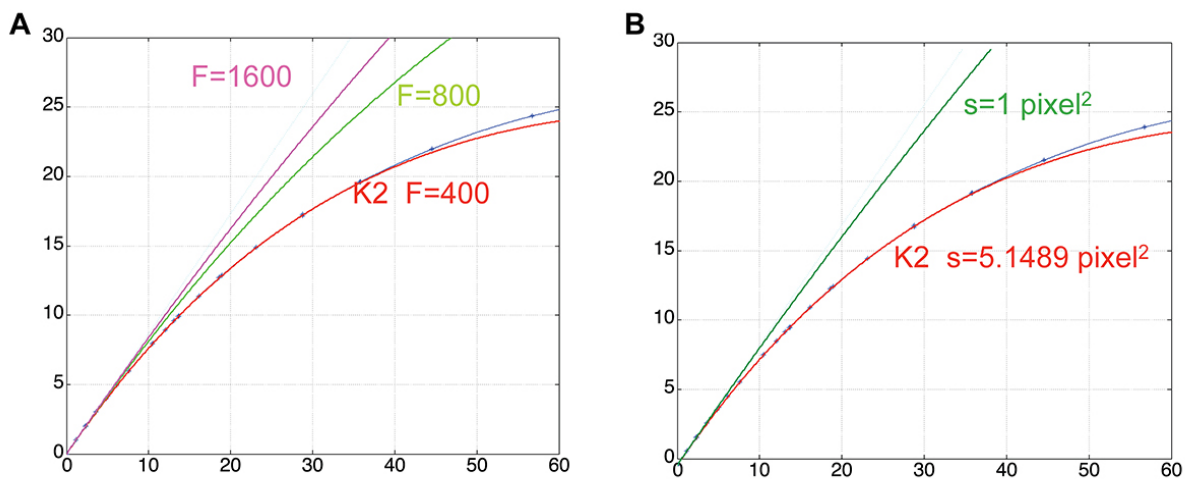
SUPPLEMENTARY FIGURES

Figure S1. Line profiles of knife-edge image recorded with the K2 Summit at different dose rate.



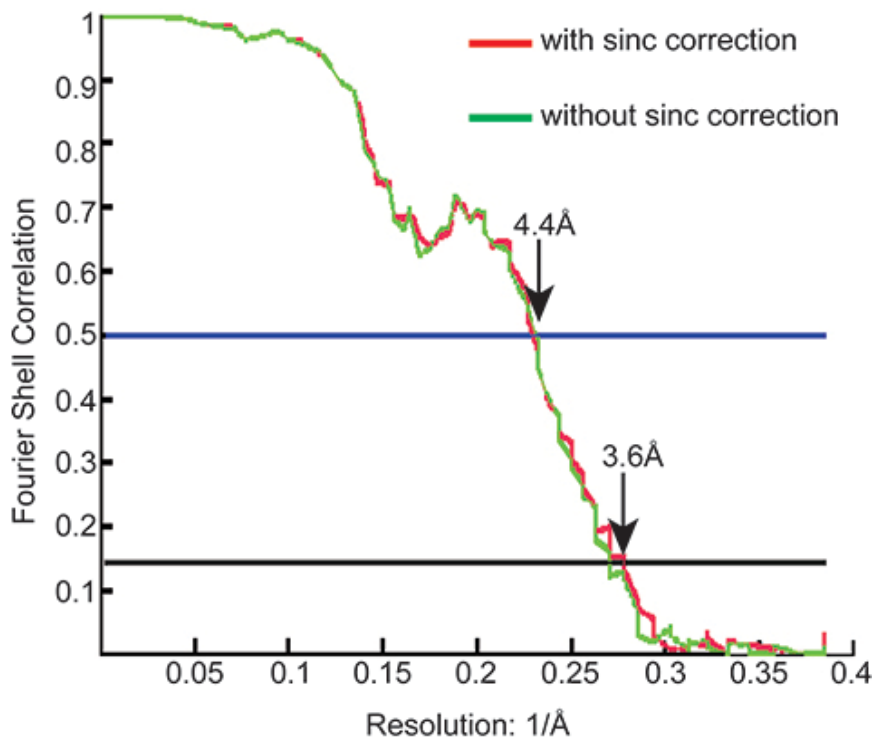
Knife-edge images were recorded using K2 Summit operated in super-resolution counting mode at different dose rates of 1, 9.4 and 19.4 counts/pixel/sec. Line profiles are plotted in A, B and C. Note that the coincidence losses at bright enhances the contrast of the edge.

Figure S2. Simulations suggest possible options to improve the linearity of DCE curve.



DCE curves were simulated based on formula (4) in the main text, using parameters determined by fitting the experimental curves, i.e. $QE = 0.8656$, $s = 5.1459 \text{ pixel}^2$ and $F = 400 \text{ frame/sec}$. (A) A higher frame rate, such as 800 or 1600 frames/sec, would improve the linearity of the DCE curve. (B) A smaller s , which corresponds to the largest area within which overlapping primary events during a single frame were lost, would also improve the linearity of the DCE curve.

Figure S3. Fourier Shell Correlations of 3D reconstructions



Fourier shell correction of 3D reconstructions with (red) and without (green) amplitude correction.