Supplemental Information for "Data-driven Picosecond X-ray Imaging for Quantitative Plasma-induced Shock Characterization"

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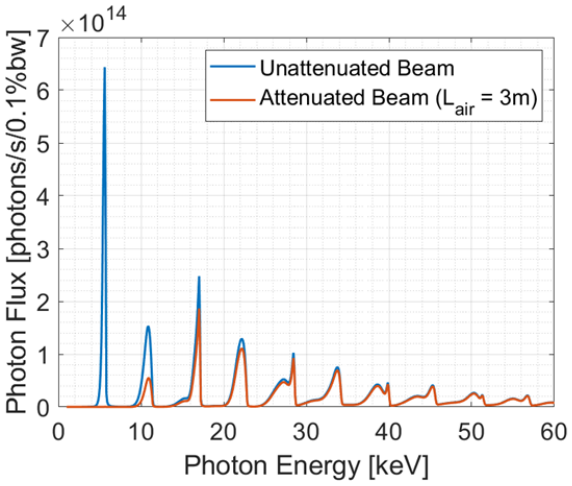

FIG. S1. Energy spectrum of the APS 32-ID-B "white beam" X-ray source used to generate all data in this work.

The physical constraints of the APS's experiment room necessitate that the X-ray beam propagate across approximately 3m of ambient air before arriving at the imaging target, which in general attenuates lower-energy photons This is quite apparent in the source's energy spectrum, as there is a relatively intense 6 keV component which gets attenuated entirely, and the three peaks below 25 keV are also attenuated to an extent. For the Fresnel-Kirchhoff diffraction model used in this work, this attenuated version of the beam was used.

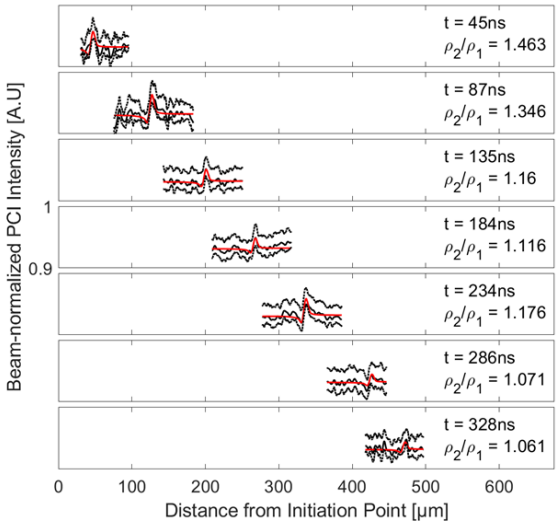

FIG. S2. Summary plots of the seven shock-visible frames analyzed in this work.

Color scheme matches Figure 4b of the main text: the solid black line represents the average extracted cutline from the PCI data, the dotted black lines show upper and lower quartiles of this averaging, and the red line shows the best simulated XPCI shock front for that particular frame.

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