

## **Description of Additional Supplementary Files**

Supplementary Video V1 - In-lab demonstration of 150X150 Field of view.

Supplementary Video V2 - Beam projection to demonstrate random-beam access mode.

Supplementary Video V3 - Demonstration of real time imaging at low frame rates.

Supplementary GIF1 - rotating chopper imaged with a framerate of 740fps

Supplementary GIF2 - rotating chopper imaged with a framerate of 740fps

Supplementary GIF3 - rotating chopper imaged with a framerate of 740fps