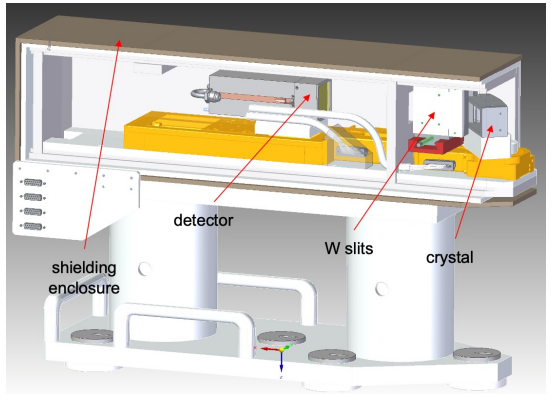
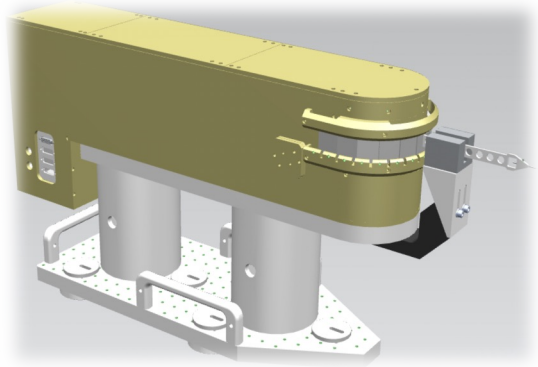
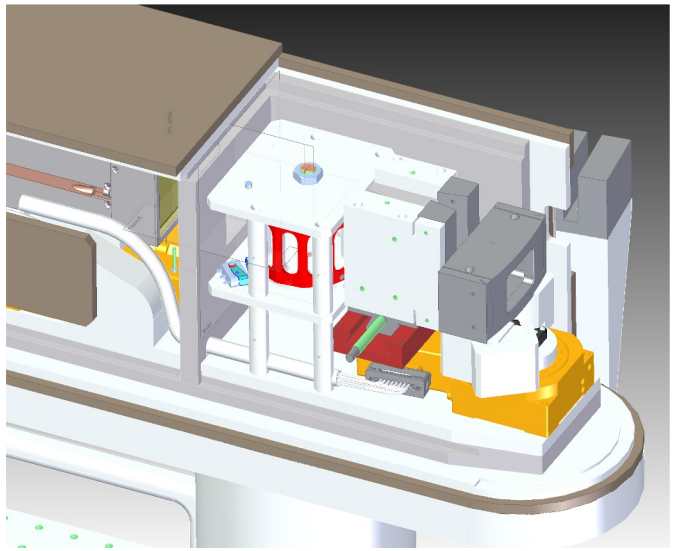
XTCS for higher X-ray photon energy

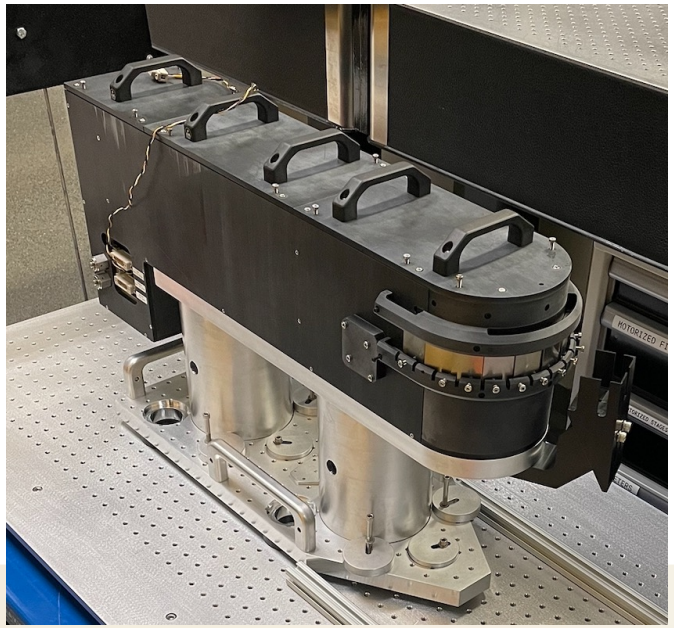
X-ray Transmission Crystal Spectrometer (XTCS)

- Build for EMP/bremsstrahlung rich environment using the Cauchois geometry
- 1000 resolving power between 6 and 25 keV
- Designed for easy alignment and installation
- Spectral window by detector: ~2 keV
- Shielding performance to prevent hot electrons distribution

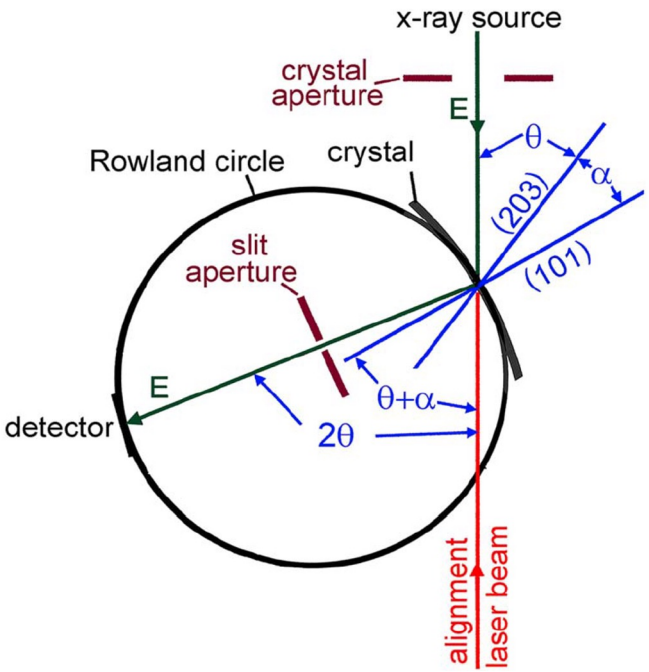








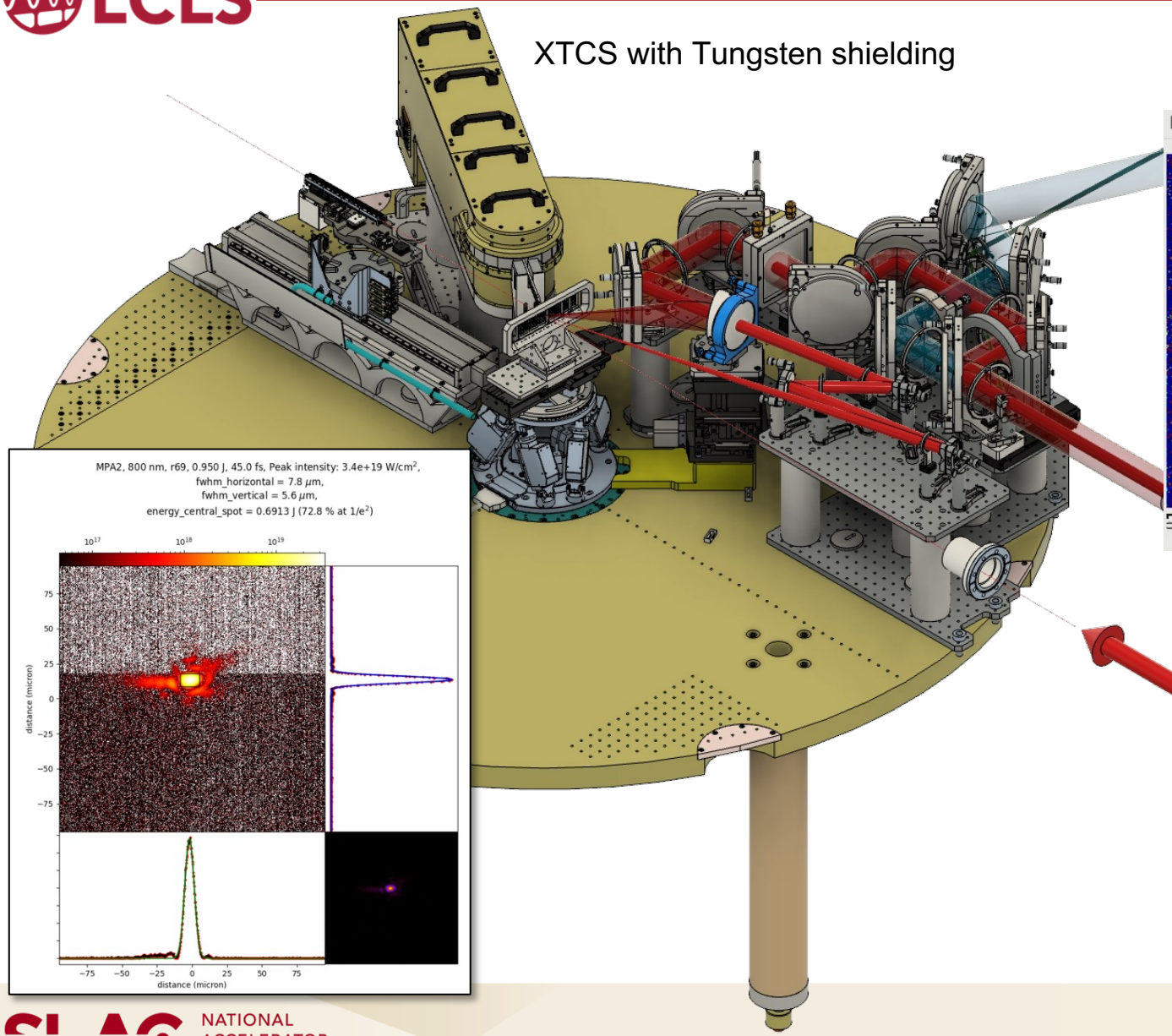
Cauchois geometry



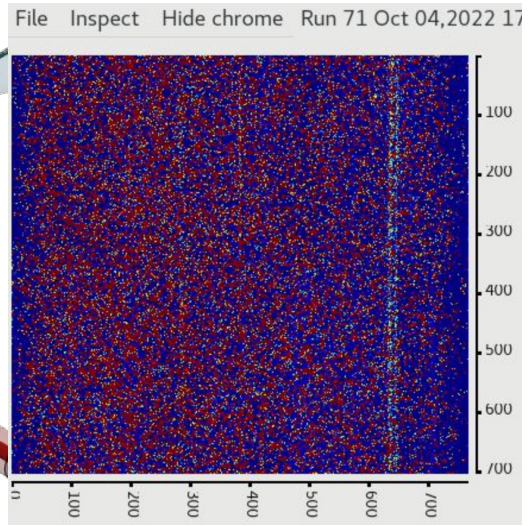
J. F. Seely, E. Galtier, L. T. Hudson, A. Henins, and U. Feldman, "High x-ray resolving power utilizing asymmetric diffraction from a quartz transmission crystal measured in the 6 kev to 22 kev energy range," Appl. Opt., vol. 58, no. 19, pp. 5225–5232, Jul. 2019.

Preliminary test of XTCS with short pulse laser

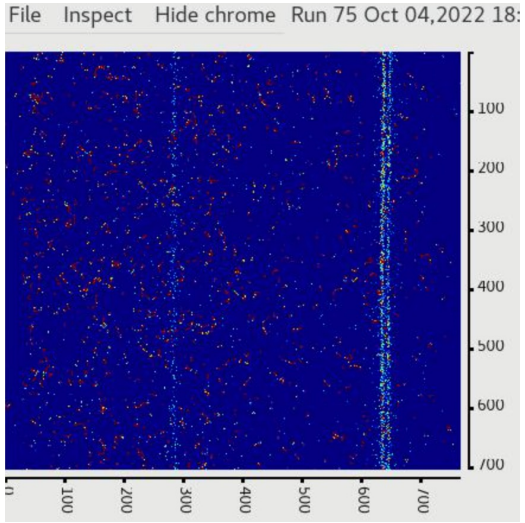
XTCS with Tungsten shielding

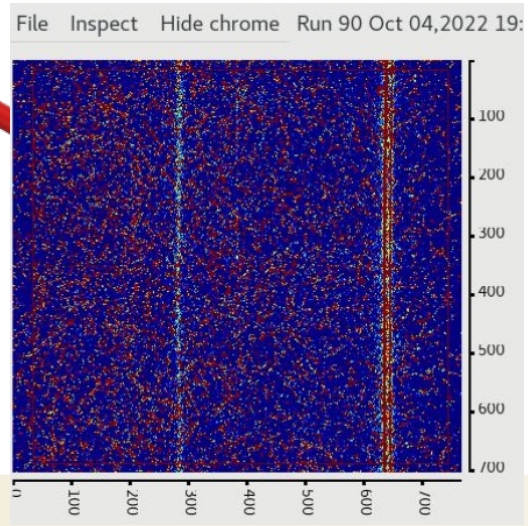


100 mJ on Cu without magnet



100 mJ on Cu with magnet





1J shot on Cu with magnet