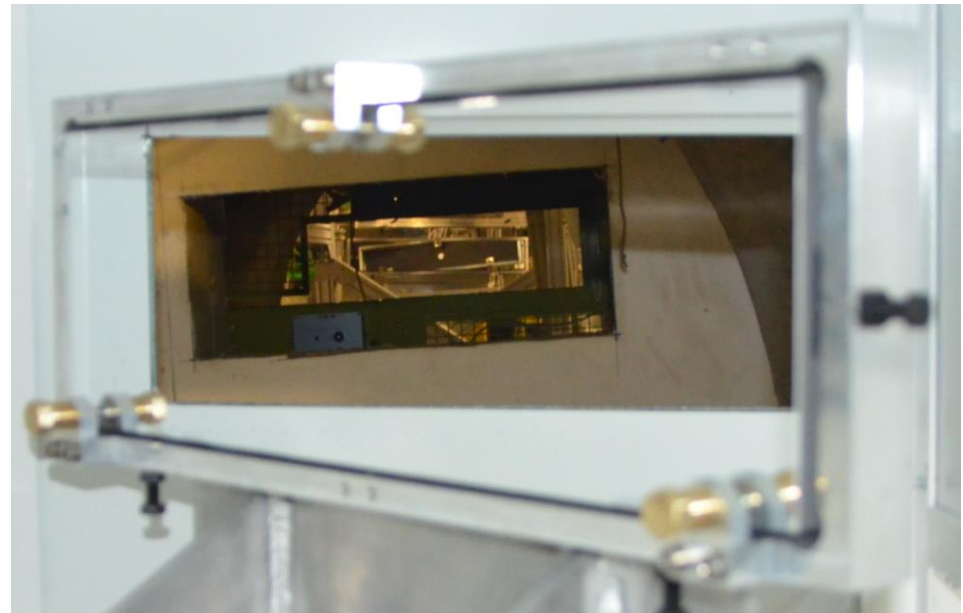
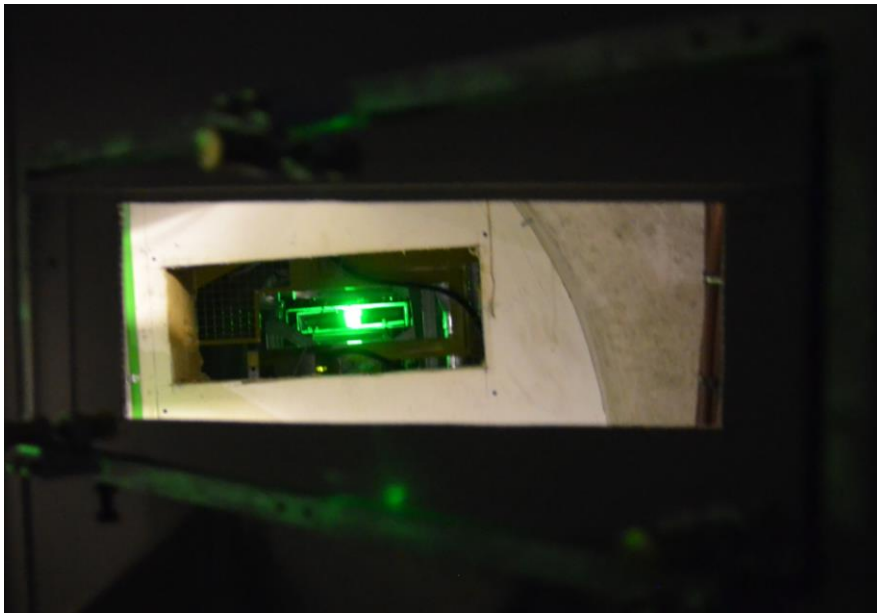
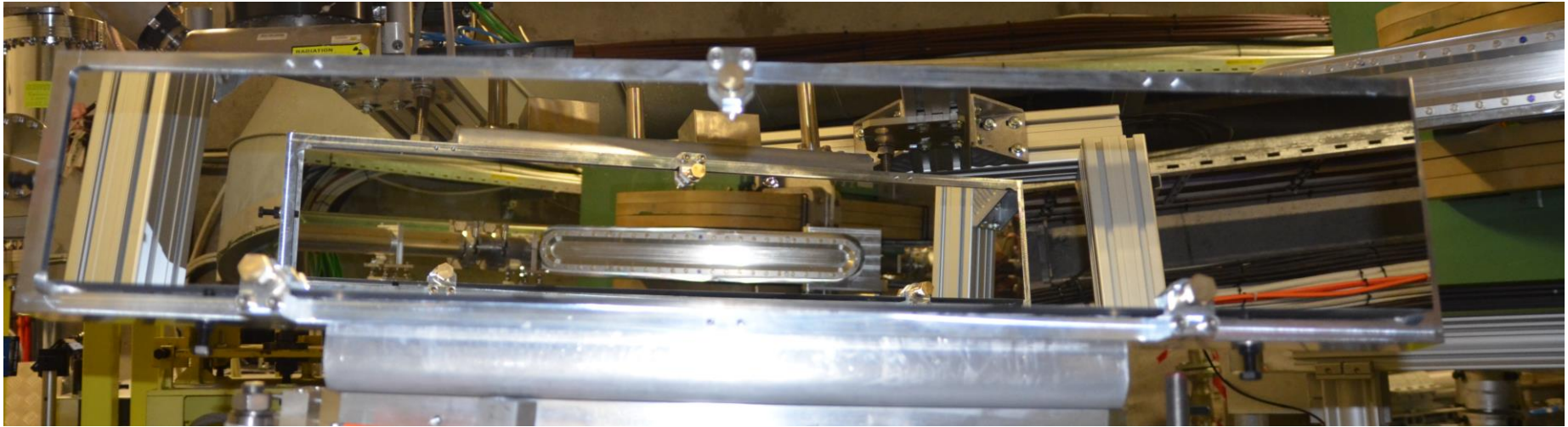


Alignment of AWAKE spectrometer optical line

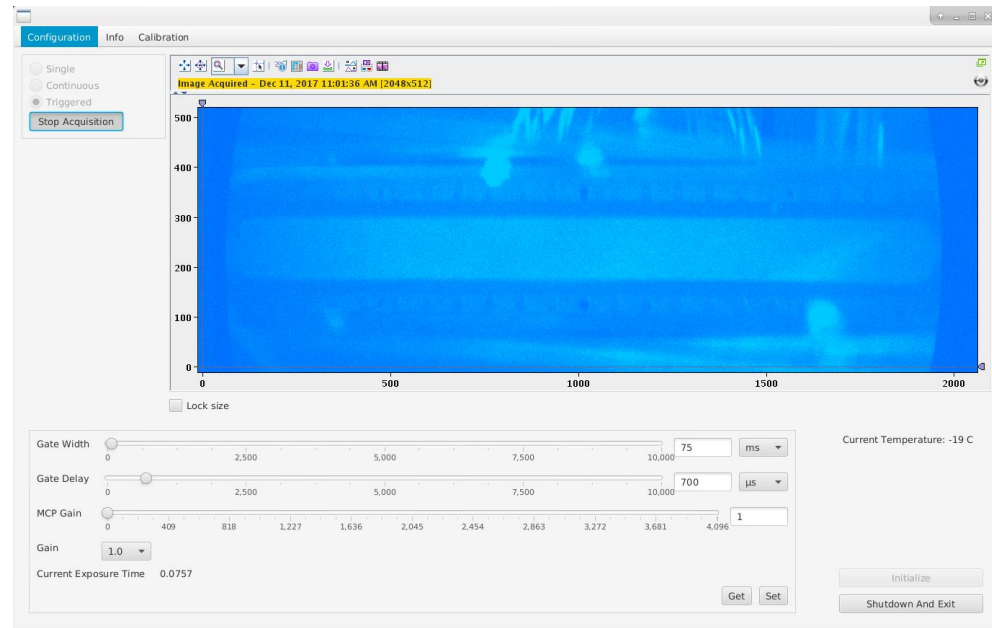
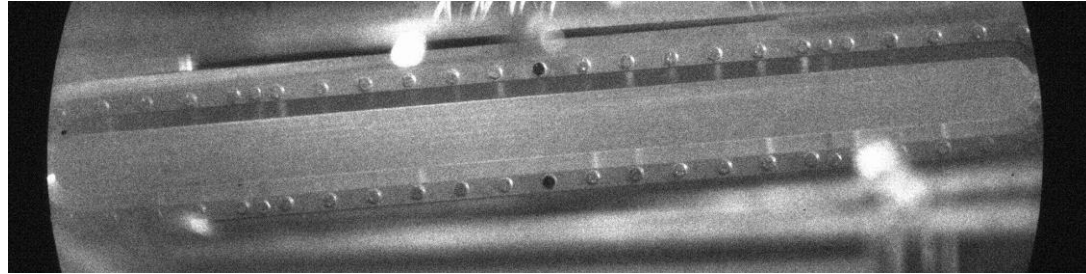
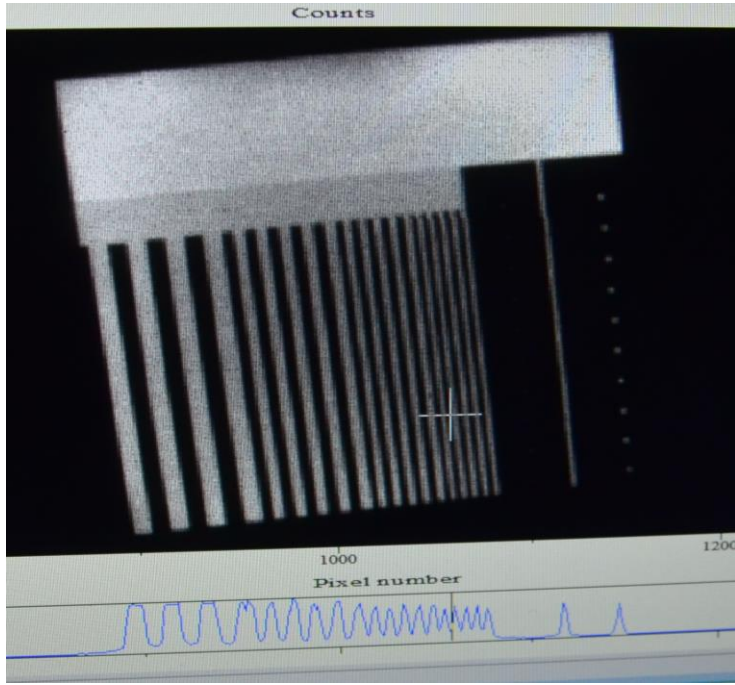
Ishkhan Gorgisyan
S. Mazzoni, F. Keeble



Installation and alignment



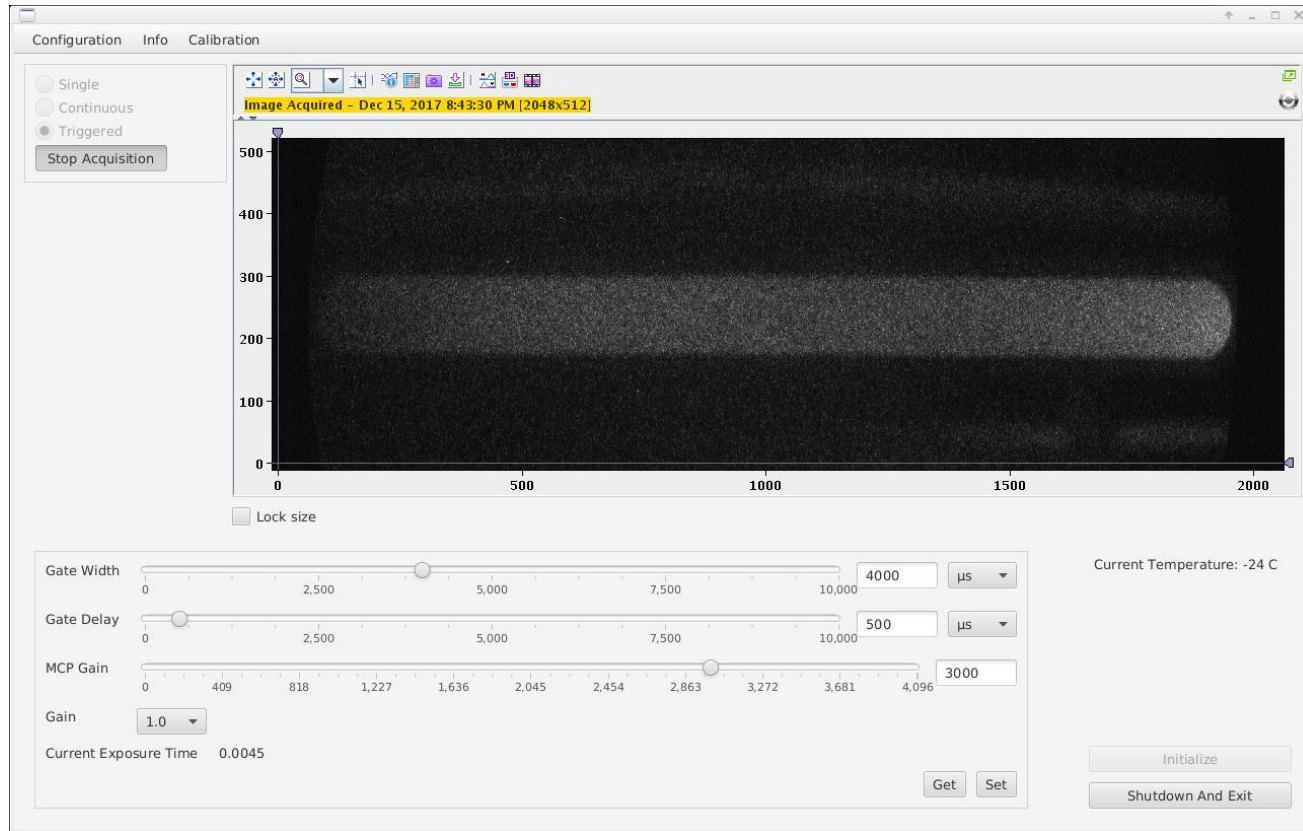
Installation and alignment



Target resolution of 1.5 mm achieved

Tilt of the image was fixed

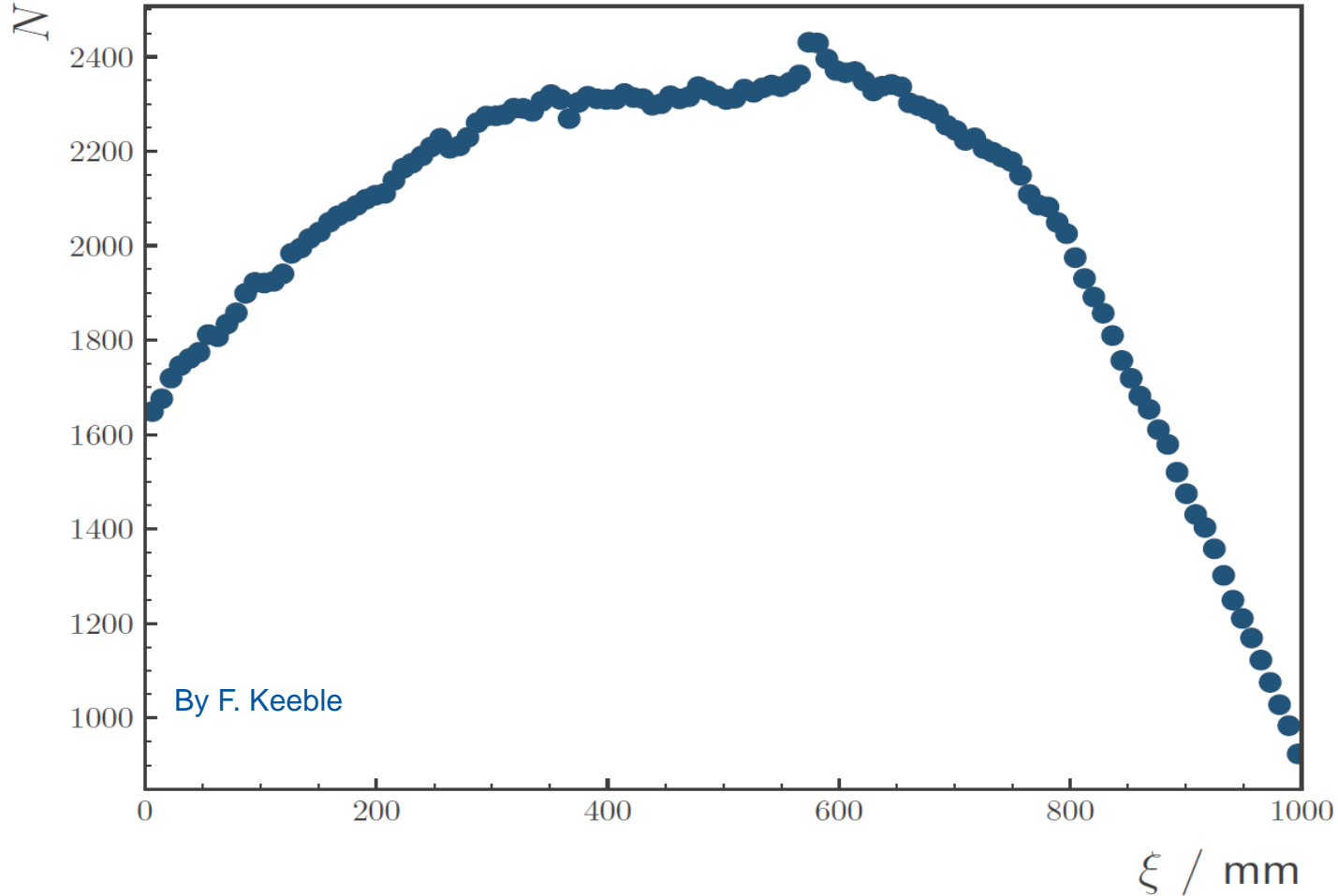
First background tests during December run



First background measurements

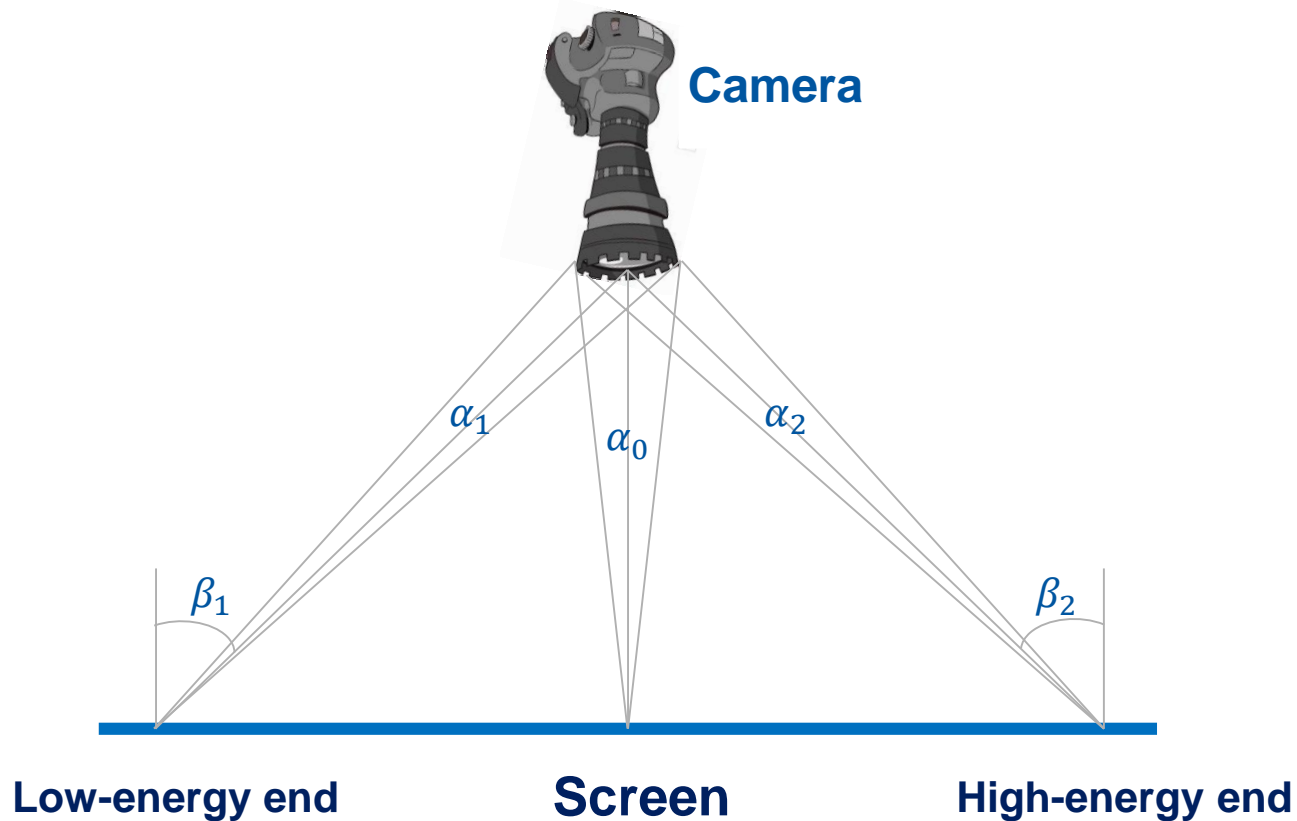
Reliable performance during the run

Vignetting



Large and asymmetric vignetting was observed after the first alignment

Realignment

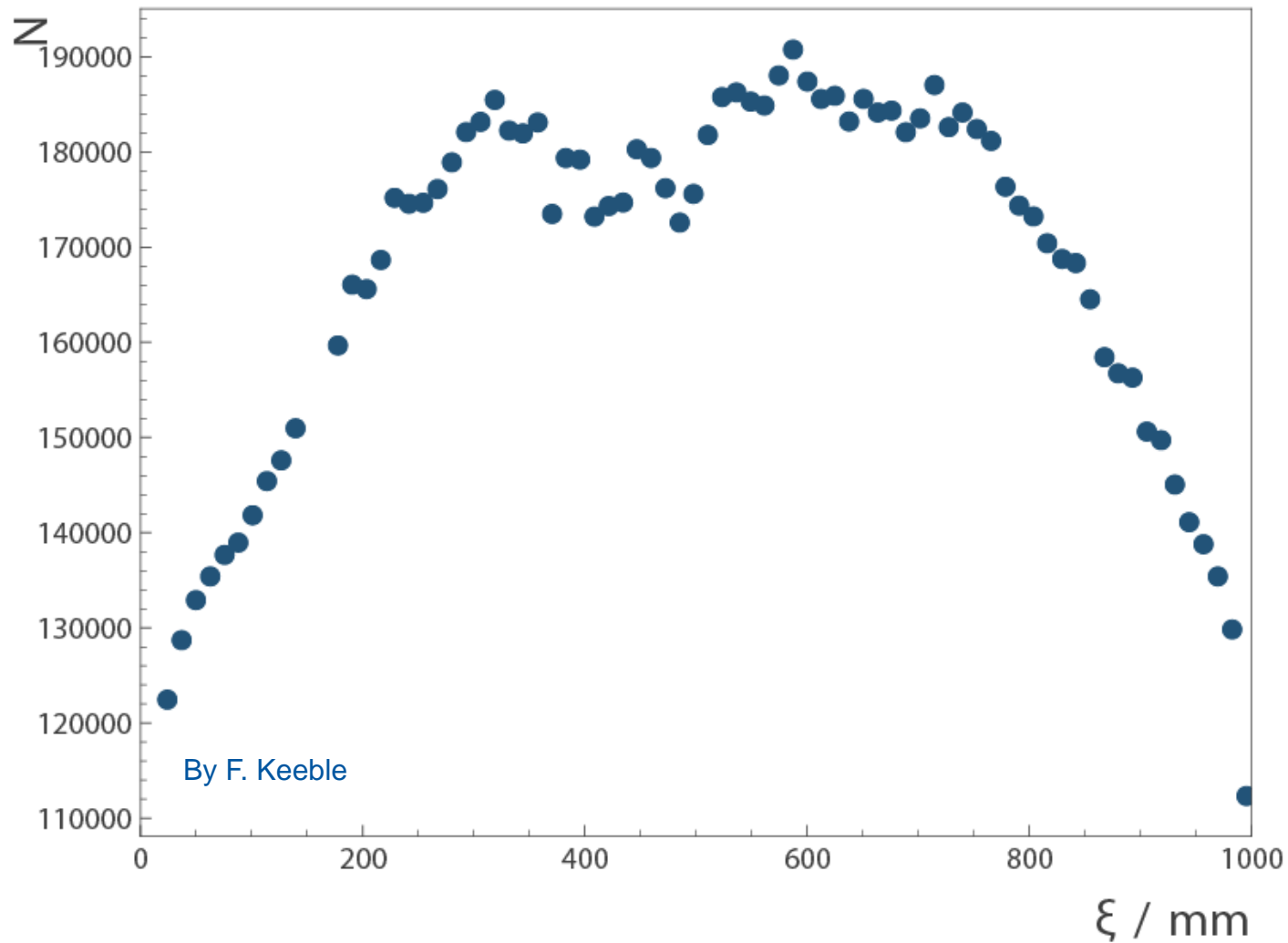


Laser beam aligned normal to the screen surface, optical axis was found

Laser orientation was scanned with a micrometric rotation stage

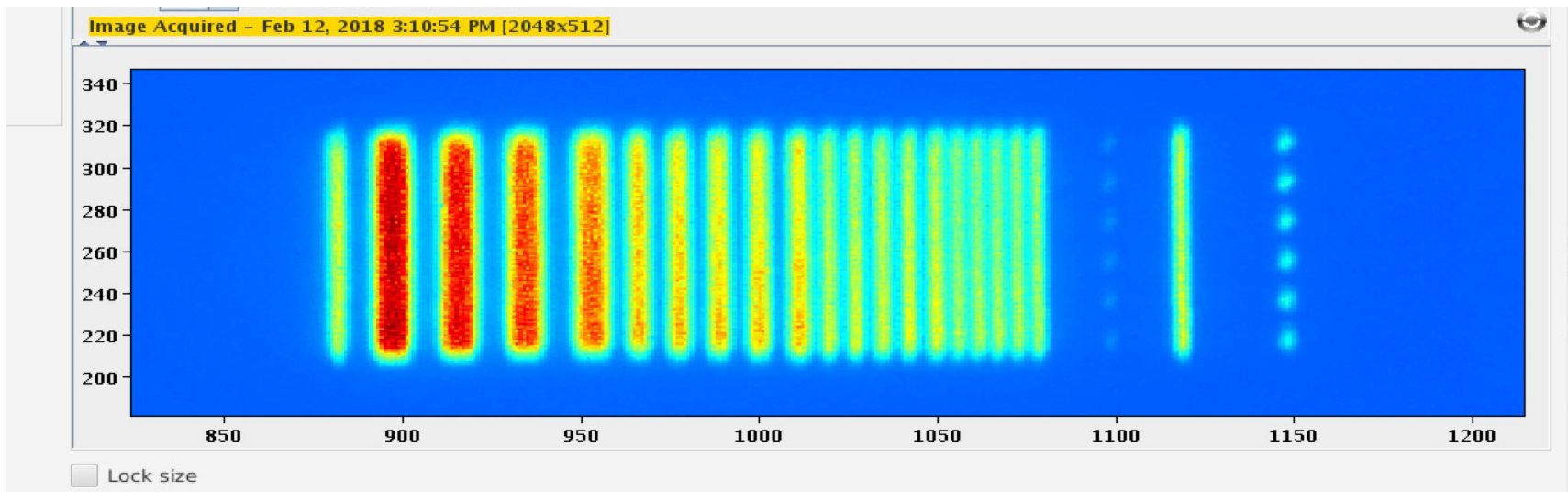
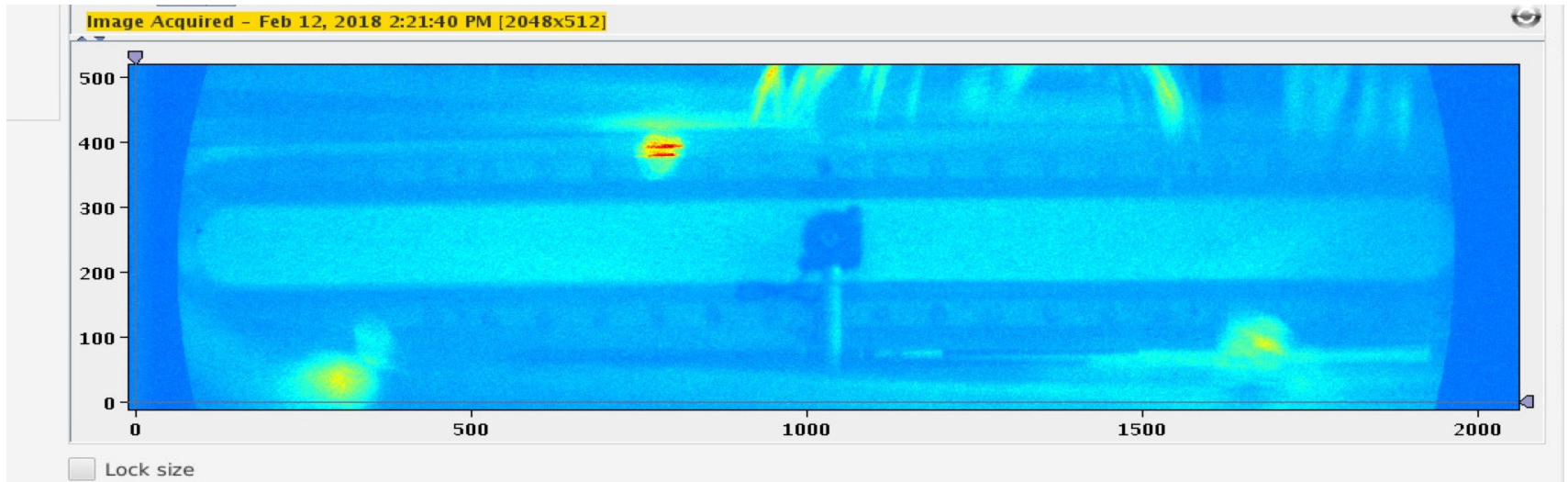
$$\alpha_0 = 8.7 \text{ mrad} \quad \alpha_1 = 8.8 \text{ mrad}, \beta_1 = 29.1 \text{ mrad} \quad \alpha_2 = 9.6 \text{ mrad} \quad \beta_2 = -28.7 \text{ mrad}$$

Realignment



First vignetting analysis shows a more symmetric profile

Realignment



Calibration mask imaged with high resolution

Thank you for attention

