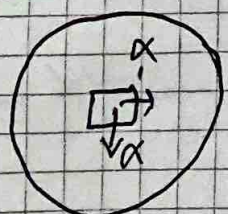


21.10.24

# Cyrce Timeslot

- Buildup of the array with Stéphane (~7:45)
- mean position for Matrix  $1\text{mm}^2$  array:  $x=22 \mid y=71.25$   
(we had to manually move the x-stage to bring it back into allowed area ~ was moved to limit switch)
- fast check with voltage: polarisation on AMS circuit seemingly ok
- we start with signal check in the beam (center)  
↳ 1st check if everything works (seemingly)
- voltage scan  $0 \rightarrow 2\text{V}$ , linearity  $1\text{nA} \rightarrow 2.5\text{nA}$ 
  - {2D-Mini-Voltage Scan -  $200\mu\text{m}$  -  $2\text{nA}$ } ~ restart - voltage not linearly ~ but it was  $1\text{nA}$  changed
  - {2D-Mini-Dark-Voltage Linearity -  $200\mu\text{m}$  -  $2\text{nA}$ } ~ but was  $0\text{nA}$
  - {2D-Mini-Voltage Linearity -  $200\mu\text{m}$  -  $0.51\text{nA}$ }  $0.51\text{nA} \rightarrow 0.50\text{nA}$
  - { " " -  $209\mu\text{m}$  -  $1.52\text{nA}$ }  $1.52\text{nA} \rightarrow 1.49\text{nA}$
  - { " - real 2 - " -  $200\mu\text{m}$  -  $2.04\text{nA}$ }  $2.04\text{nA} \rightarrow 2.015\text{nA}$
  - { " - ~~real 2~~ - " -  $200\mu\text{m}$  -  $2.50\text{nA}$ }  $2.50(6)\text{nA} \rightarrow 2.47\text{nA}$
  - {2D-Mini-YScan -  $209\mu\text{m}$  -  $2.0\text{nA}$ }  $2.0 \rightarrow 1.88\text{nA}$
  - {2D-Mini-FullXYScan -  $200\mu\text{m}$  -  $2.0\text{nA}$ }  $1.98\text{nA} \rightarrow 1.84\text{nA}$

9:46



$\alpha = 0.25\text{mm}$

- We do this with different voltages at each position
- First for round aperture, then for objects

{ " - Super Res Scan - }  $2.02\text{nA} \rightarrow 1.93\text{nA}$

↳ with diffused beam

center:  $22 \mid 71.25$  { " - Super Res Scan Misc Set - }  $2.01\text{nA} \rightarrow 1.93\text{nA}$

$x: 21.5 \rightarrow 22.5$

$y: 70.75 \rightarrow 71.75$

}  $\Rightarrow$  We apply this  $4 \times 4$  position scheme for super Res tests

= 16 steps with super resolution + a voltage scan from  $0.9 \rightarrow 1.9$



- We want to position on  
Star of Miss Sella Shape:  $114.5/2 = Y$   
 $57.4/2 = X$

$$I_{\text{target}} = I_{\text{up}} \times 0.574$$

- We continue with a scan of the whole mask (different voltage  $0.9 \rightarrow 1.9V$ )  
 $2.03nA \rightarrow 1.90nA$  0.5V steps

## 12:16 Gafchromic Image

- We reposition the array for the line scan over lunch
- {2D- Mini - line -  $0.1mm$ }  $2.00nA \rightarrow$   
  - ↳ we cannot use  $0.2s$  out time (file name is not recognized)
  - ↳ we use  $1s$
  - ↳ using overexposure  $\rightarrow$  we can use  $0.2s$

## 12:40 Start

- We finish at  $\sim 14:00$  (and a Gafchromic should be taken shortly afterwards)
- We scan the middle of the diffused beam at different proton energies
- We choose position  $0, 10, 14, 18, 19$  (txt file)
- For diff. beam:
  - Wheel 0  $2.03nA \rightarrow 2.04nA$
- { " - Beam - Wheel x - " } - Wheel 5  $2.04nA \rightarrow 2.04nA$
- ↳ put the
  - Wheel 11  $2.05nA \rightarrow 2.05nA$
- subview wheel
  - Wheel 15  $2.05nA \rightarrow 2.05nA$
- position in the
  - Wheel 18  $2.05nA \rightarrow 2.05nA$
- file name
  - Wheel 19  $2.05nA \rightarrow 2.05nA$
  - Wheel 20  $2.03nA \rightarrow 2.05nA$
- We now do y-translated measurement after high dose

$Y: 55.25 \rightarrow 87.25$  /  $0.5$  steps  $2.05nA \rightarrow 2.05nA$

- 15:08 [Intended with voltage scan, but not working  $\rightarrow$  so all at 1.9V]
- Linearity Scan after:  $- 500pA \rightarrow 500pA$
  - Linearity After - " - x - nA } -  $1.00nA \rightarrow 1.00nA$
  - $1.52nA \rightarrow 1.52nA$



- 2,53 nA  $\rightarrow$  2,53 nA

- We image the Misc shape in the round aperture

$\rightarrow$  We want to image around the \$ sign { Misc - Wheel x }

x: 24  $\rightarrow$  35 12.75 steps y: 63.25  $\rightarrow$  66 12.75 step  $\rightarrow$  2,53 nA

• Wheel 1: 2,05 nA  $\rightarrow$  2,05 nA

• Wheel 5: 2,05 nA  $\rightarrow$  2,05 nA

• Wheel 11: 2,05 nA  $\rightarrow$  2,05 nA

• Wheel 15: 2,06 nA  $\rightarrow$  2,056 nA

• Wheel 18: 2,056 nA  $\rightarrow$  2,050 nA

• Wheel 19: 2,053 nA  $\rightarrow$  2,053 nA

• Wheel 20: 2,053 nA  $\rightarrow$  2,05 nA

instead of  
2,0 nA in  
filename!

- We insert the wedge  $\rightarrow$  positioned with vertical marking aligned to telescope

- We measure for each wheel position: (y scan 59.25  $\rightarrow$  63.25 / 1. steps, 15 sample size)

• wheel 1: 2,05 nA  $\rightarrow$  2,05 nA

• wheel 2: 2,05 nA  $\rightarrow$  2,05 nA

• wheel 3: 2,05 nA  $\rightarrow$  2,046 nA

• 4: 2,043 nA  $\rightarrow$  2,043 nA

5: 2,05 nA  $\rightarrow$  2,05 nA

6: 2,05 nA  $\rightarrow$  2,05 nA

7: 2,05 nA  $\rightarrow$  2,05 nA

8: 2,05 nA  $\rightarrow$  2,05 nA

9: 2,05 nA  $\rightarrow$  2,046 nA

10: 2,046 nA  $\rightarrow$  2,05 nA

11: 2,05 nA  $\rightarrow$  2,05 nA

12: 2,05 nA  $\rightarrow$  2,046 nA

13: 2,042 nA  $\rightarrow$  2,045 nA

14: 2,044 nA  $\rightarrow$  2,05 nA

15: 2,045 nA  $\rightarrow$  2,048 nA

16: 2,046 nA  $\rightarrow$  2,044 nA

17: 2,046 nA  $\rightarrow$  2,05 nA

18: 2,05 nA  $\rightarrow$  2,048 nA

19: 2,048 nA  $\rightarrow$  2,050 nA

20: 2,045 nA  $\rightarrow$  2,052 nA



- We change the away (it is a CUS filtered in aligned cross hair)

27 / 132.75

66.375

- w1 2.06 nA

~~wheel 2~~  
wheel 2 2.06 nA

wheel 3 2.06 nA

wheel 4 2.06 nA

5 2.065 nA  $\rightarrow$  2.066 nA

6 2.066 nA  $\rightarrow$  2.067 nA

7 2.067 nA  $\rightarrow$  2.07 nA

8 2.07 nA  $\rightarrow$  2.07 nA

9 2.07 nA  $\rightarrow$  2.07 nA

10 2.072 nA  $\rightarrow$  2.072 nA

11 2.073 nA  $\rightarrow$  2.075 nA

12 2.074 nA  $\rightarrow$  2.075 nA

13 2.072 nA  $\rightarrow$  2.075 nA

14 2.075 nA  $\rightarrow$  2.075 nA

15 2.074 nA  $\rightarrow$  2.075 nA

16 2.078 nA  $\rightarrow$  2.08 nA

17 2.044 nA  $\rightarrow$  2.044 nA

18 2.043 nA  $\rightarrow$  2.045 nA

19 2.043 nA  $\rightarrow$  2.046 nA

20 2.044 nA  $\rightarrow$  2.048 nA