

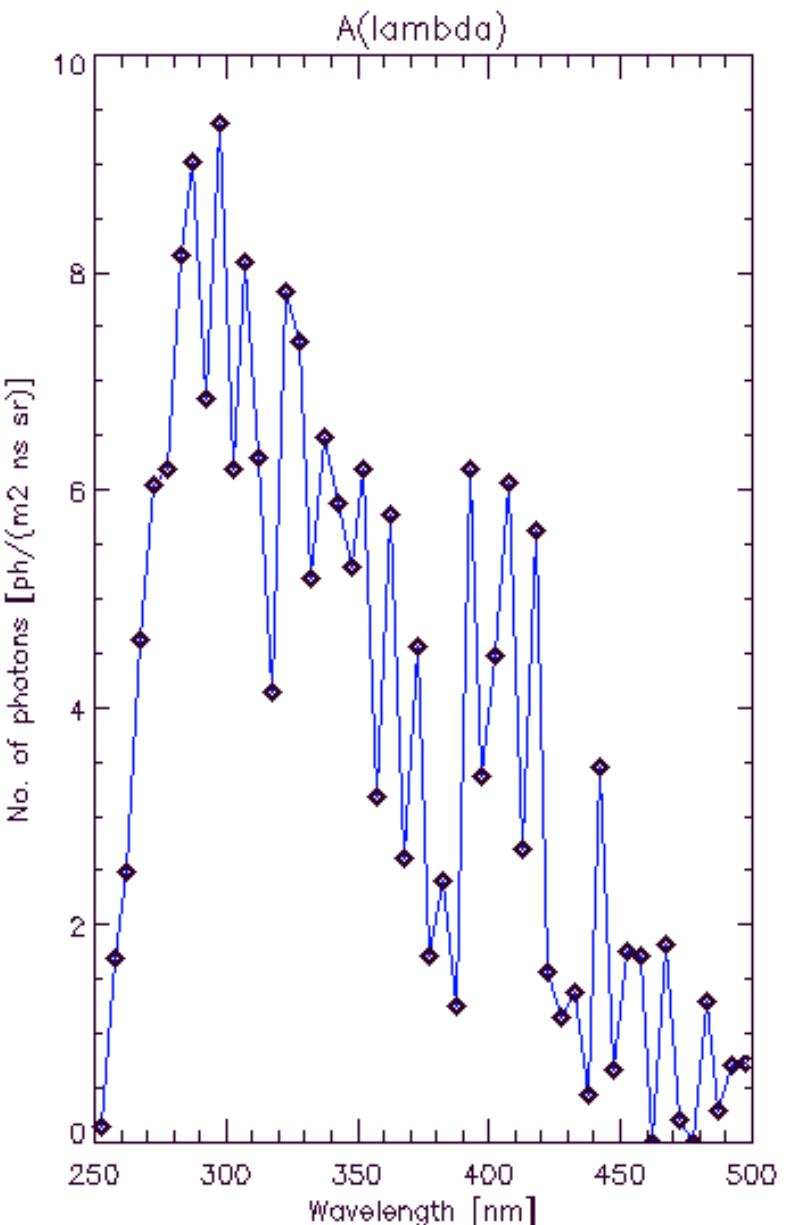
# Background distribution at FS

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K. Kudela, S. Pastircak*

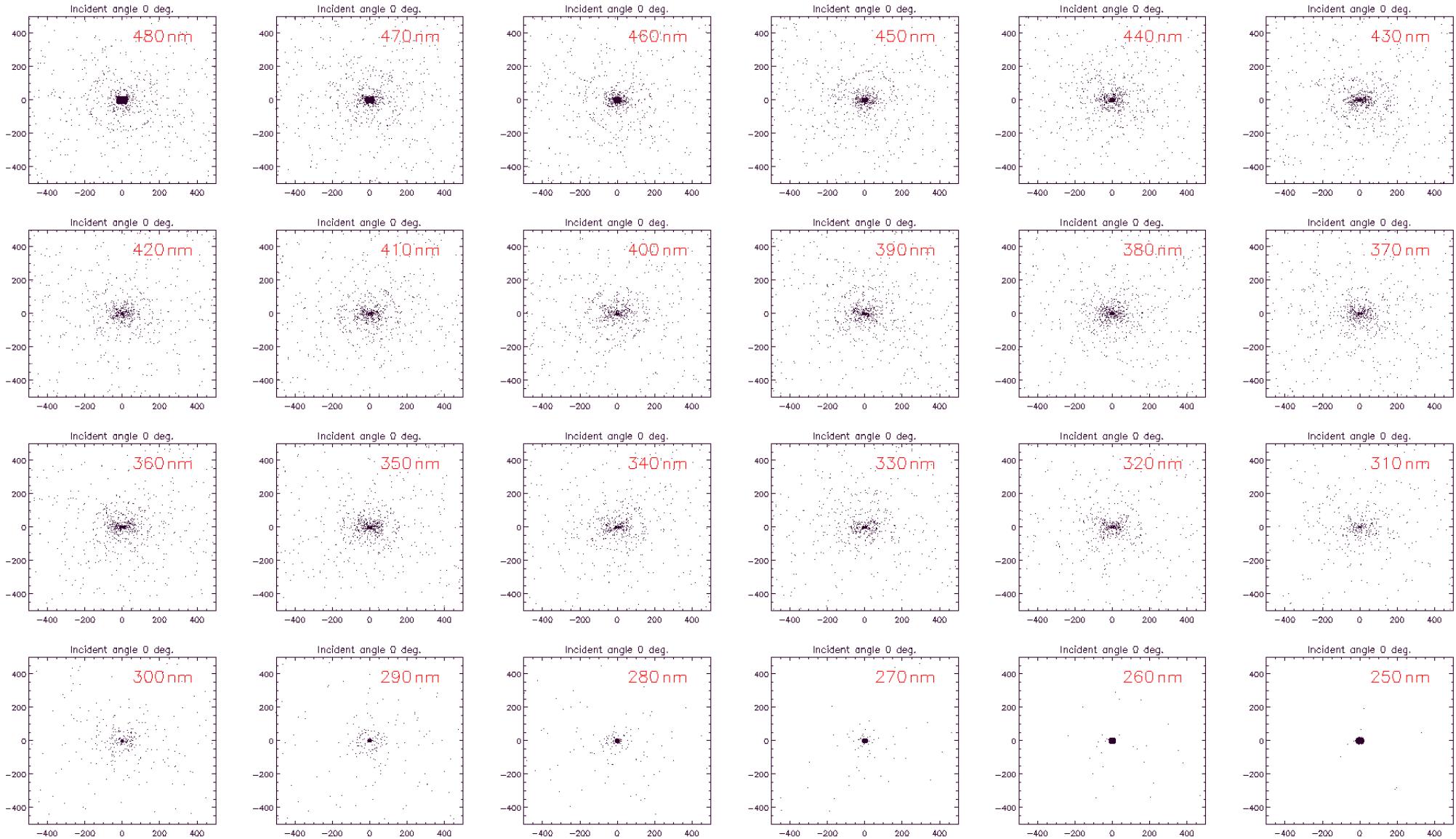
JEM-EUSO simulation meeting, Madrid, 26.-30. march 2012



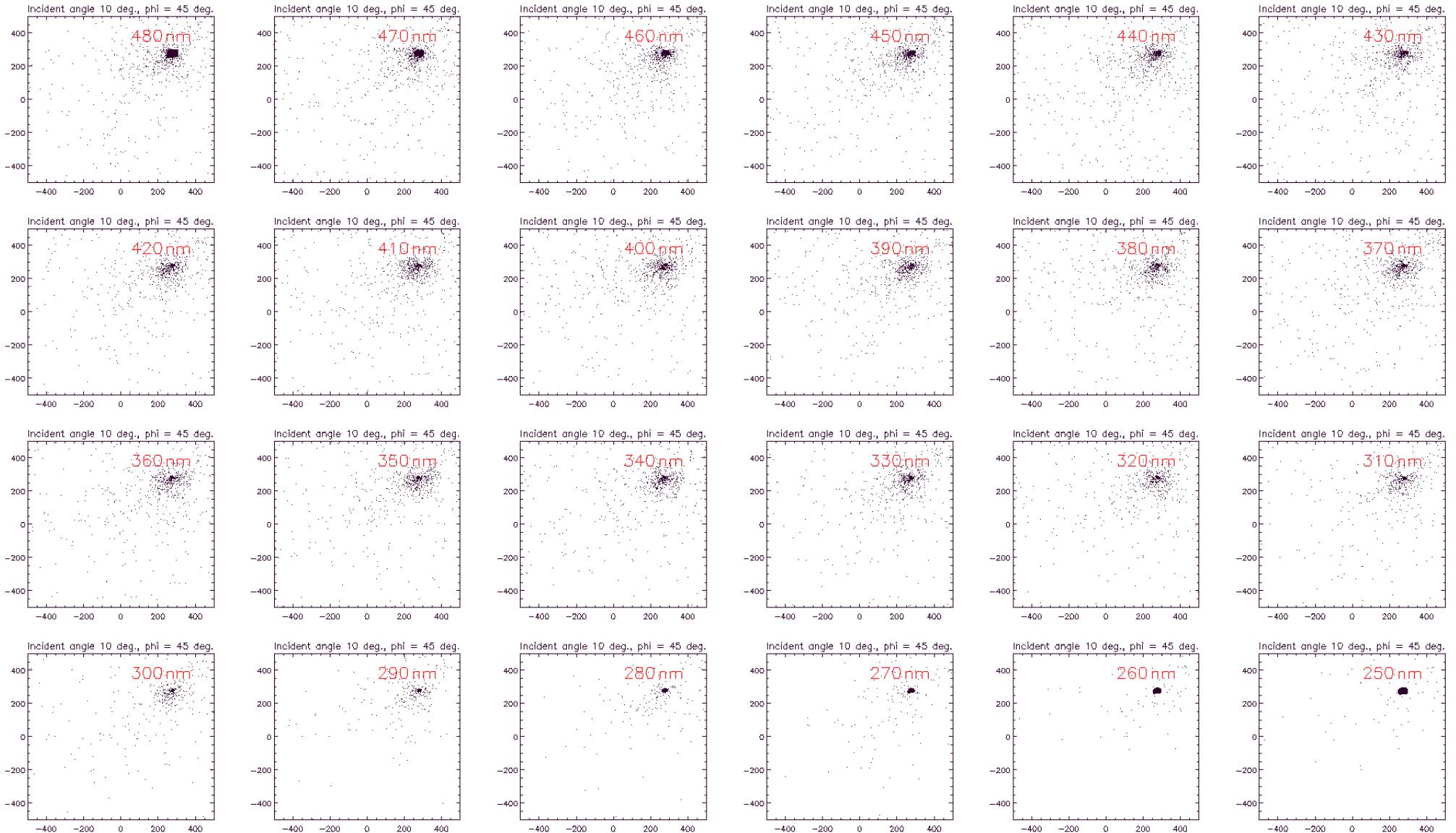
- Raytrace code :  
Ccode-ns-100911-101019\_release\_for\_ESAF
- Config file :  
telparm\_PPP\_2010\_08.dat
- JEM-EUSO UV spectrum model 1  
report:  
[http://space.saske.sk/JEM/UV\\_BG\\_spectrum\\_v1.pdf](http://space.saske.sk/JEM/UV_BG_spectrum_v1.pdf)  
usual user/password



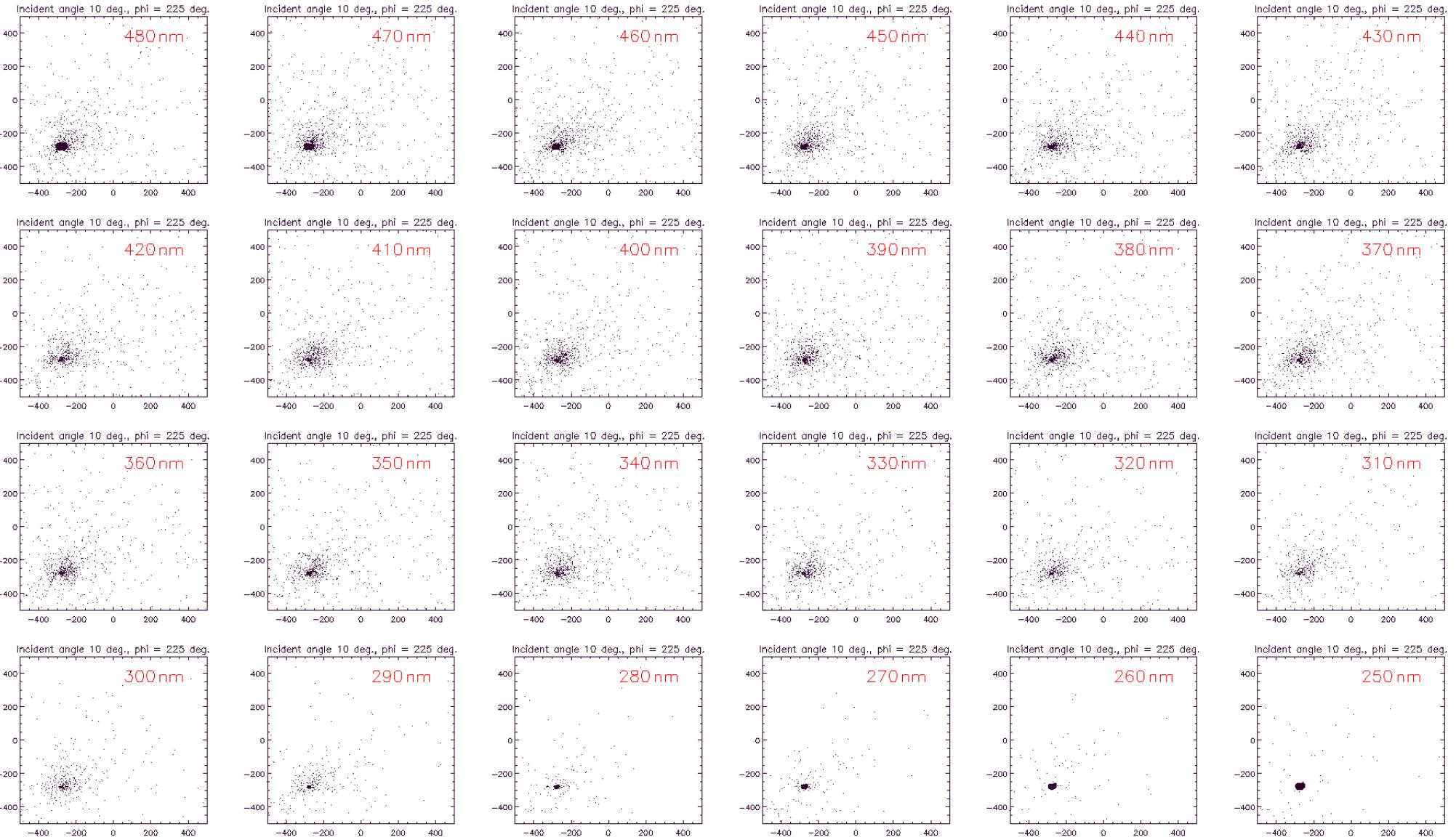
# Incident / zenith angle $\theta = 0^\circ$



# Incident / zenith angle $\theta = 10^\circ$ , azimuth $\phi = 45^\circ$

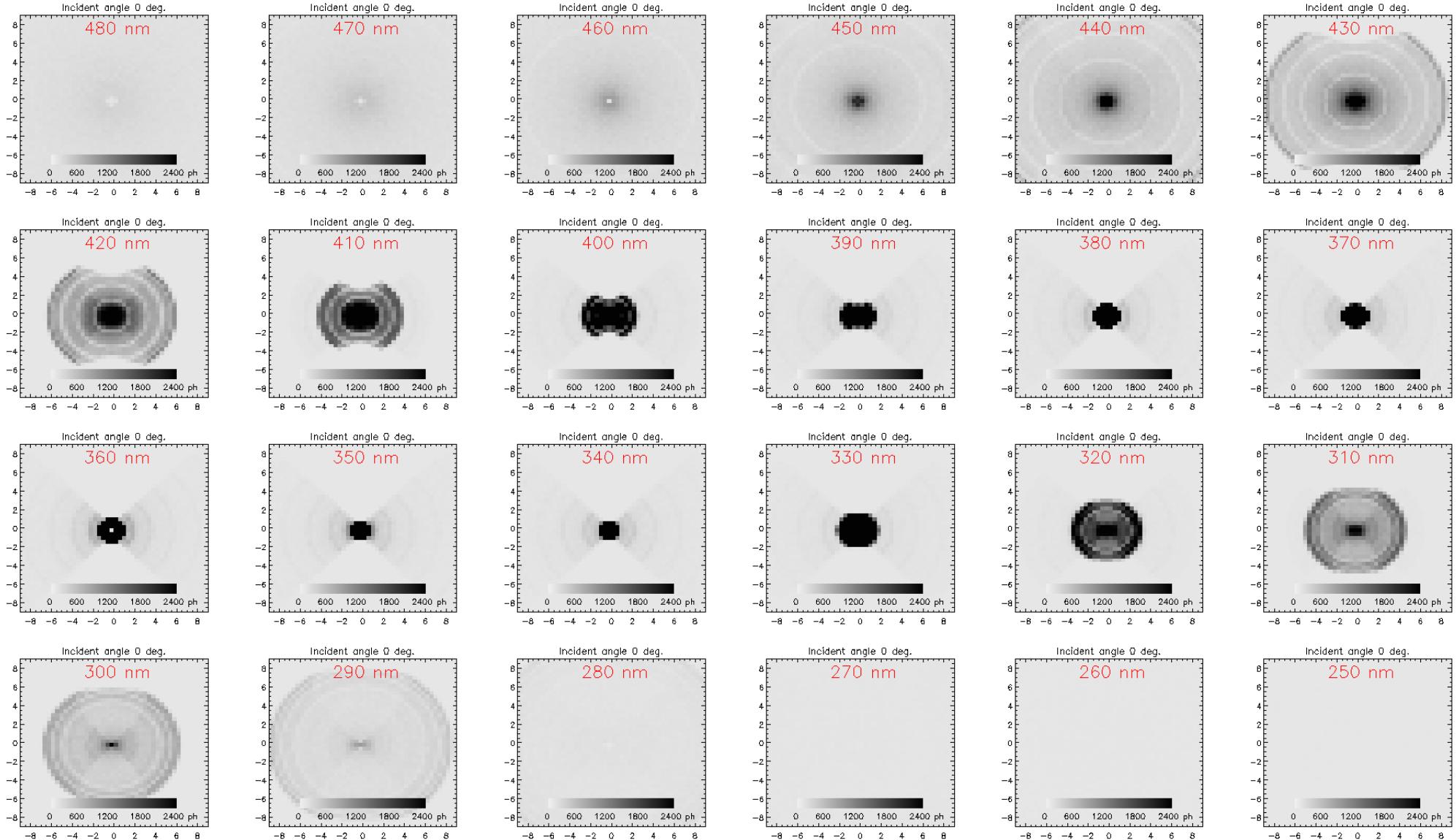


# Incident / zenith angle $\theta = 10^\circ$ , azimuth $\phi = 225^\circ$

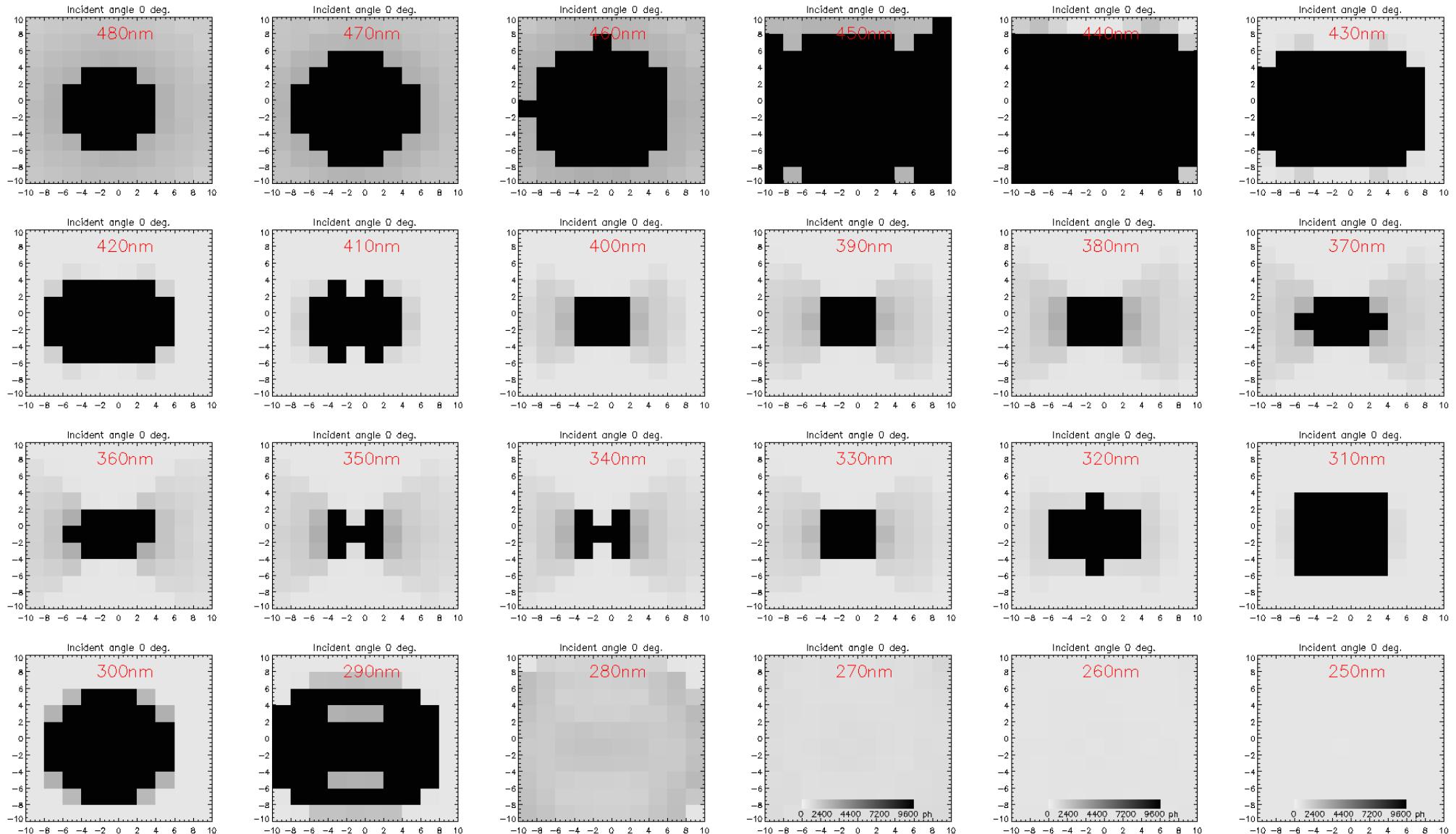


# Incident / zenith angle $\theta = 0^\circ$ , $N = 1\text{e}6$ ph

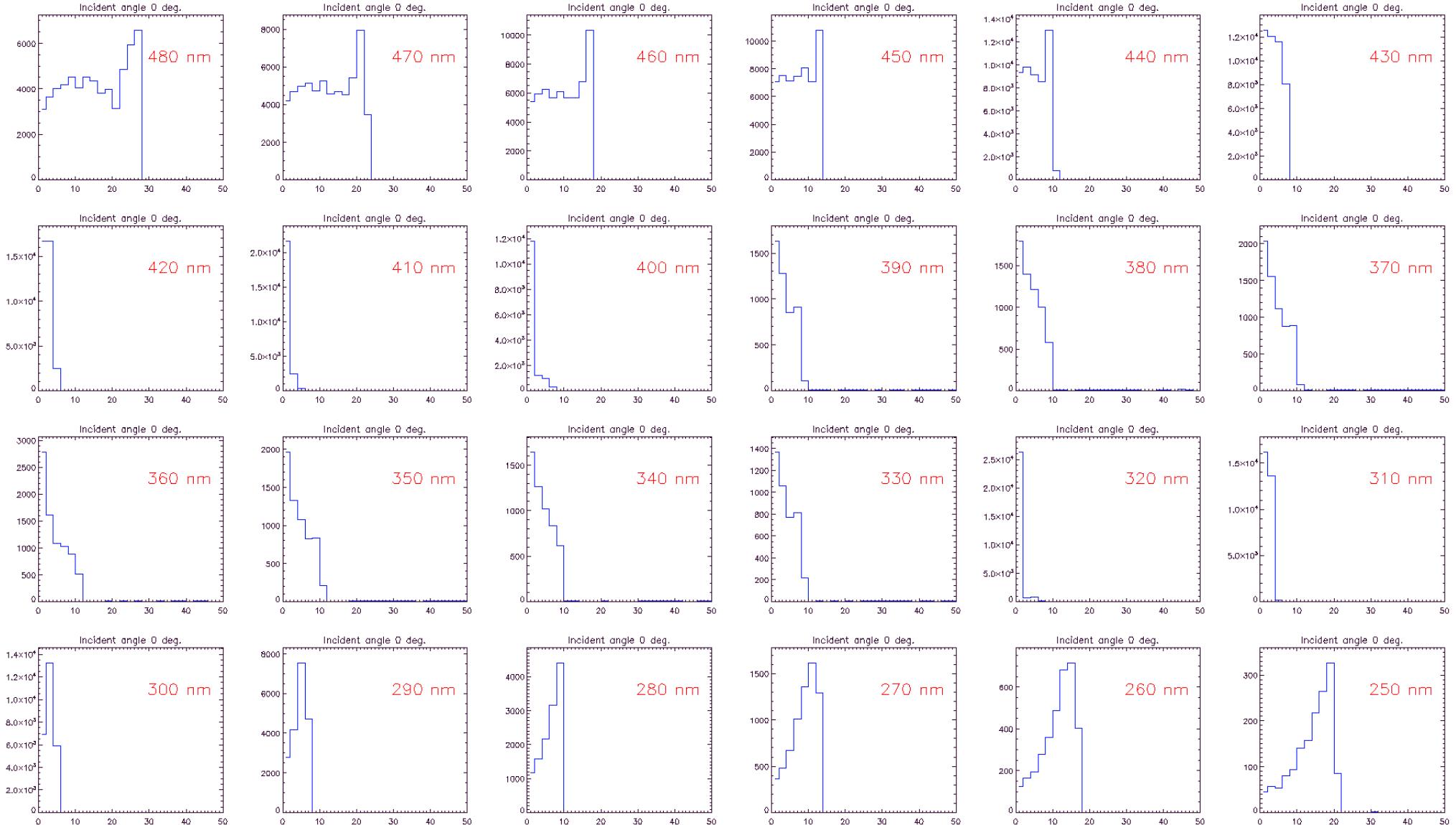
*$0,4 \times 0,4 \text{ mm cells}$ , scale  $0 - 2400 \text{ ph}/\text{cell}$*



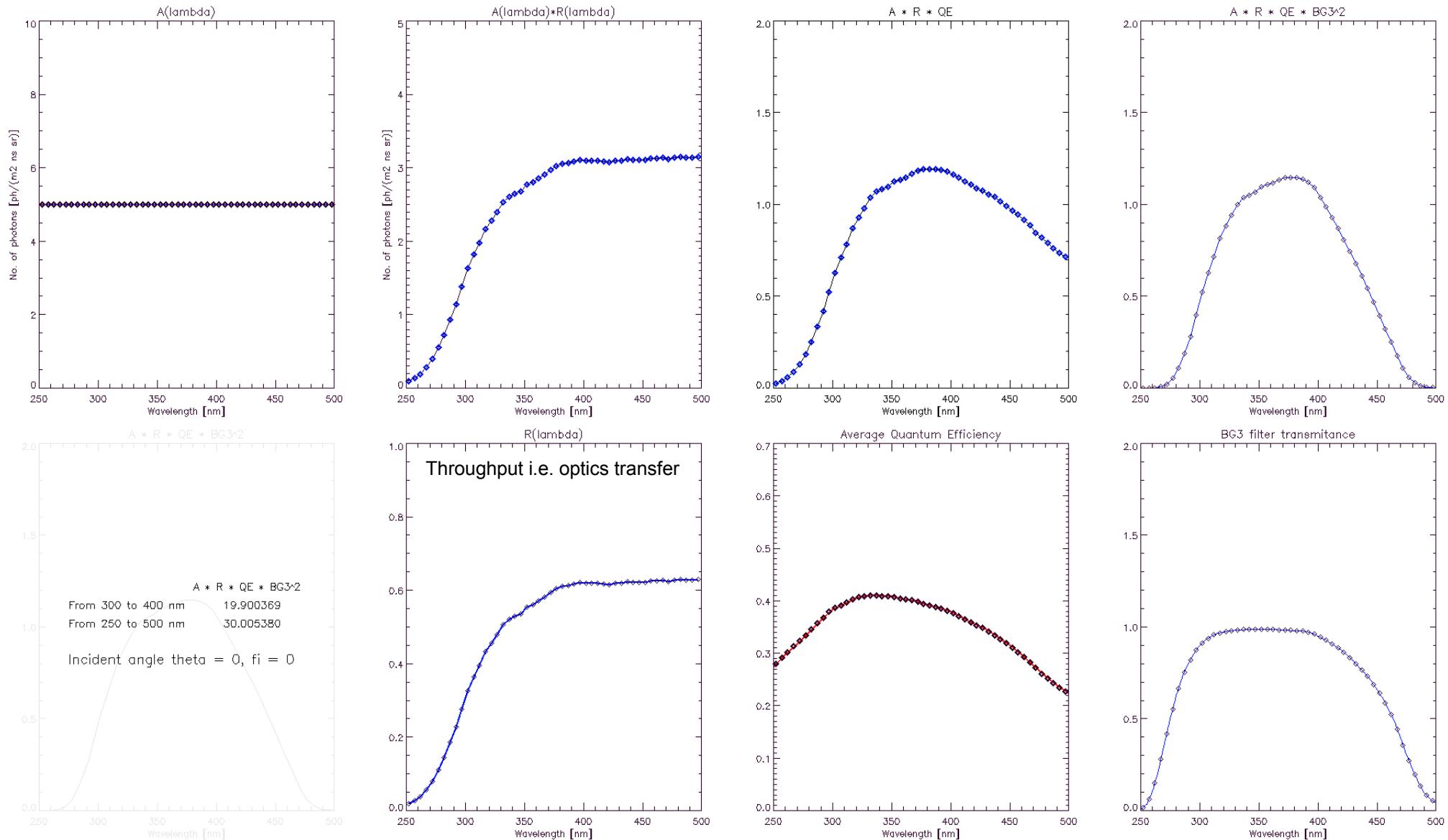
# Incident / zenith angle $\theta = 0^\circ$ , $N = 1\text{e}6$ ph $2 \times 2 \text{ mm cells}$ , scale 0 – 9600 ph/cell



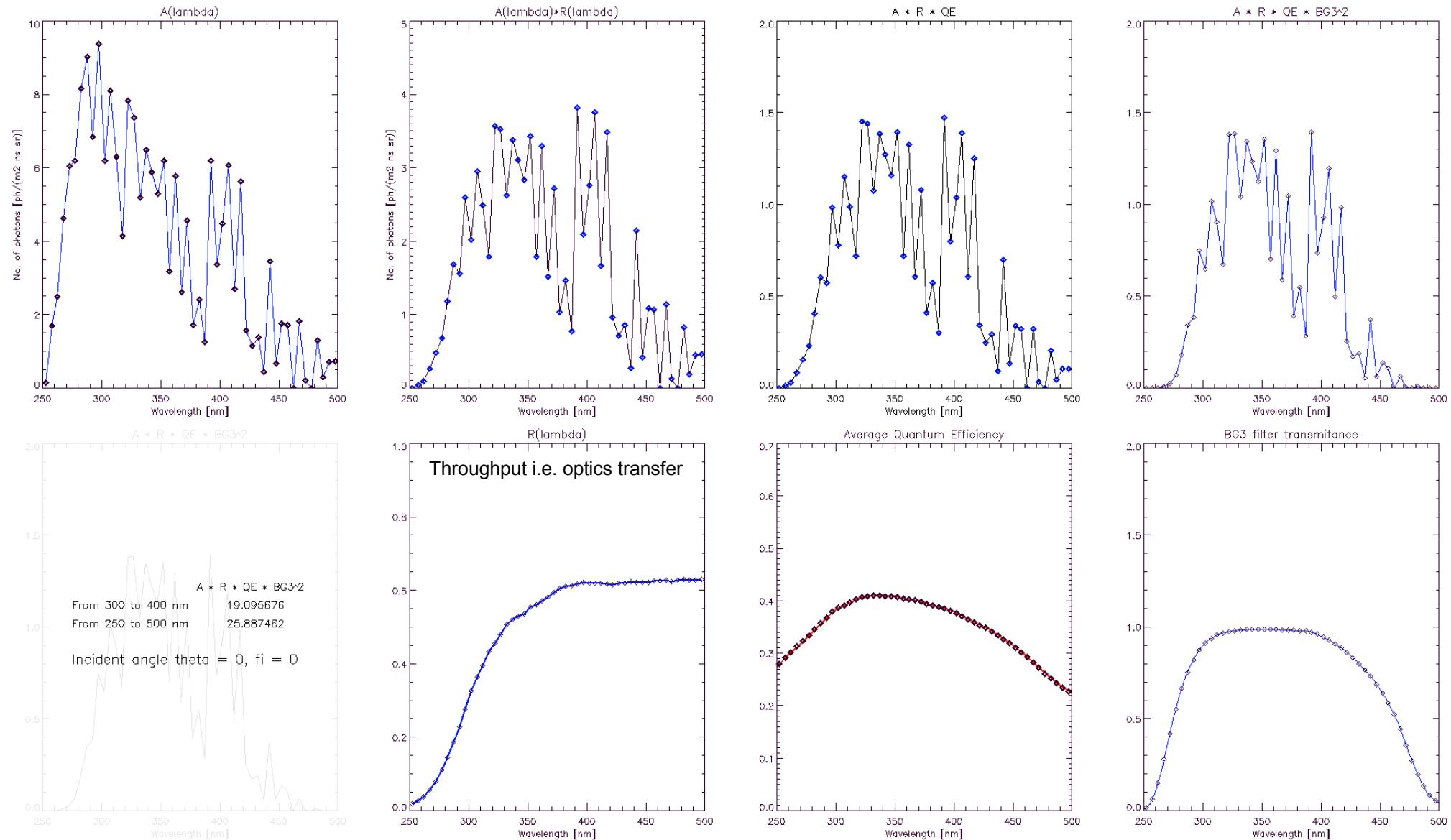
# Incident / zenith angle $\theta = 0^\circ$ , $N = 1\text{e}6$ ph *distance on radius at FS*



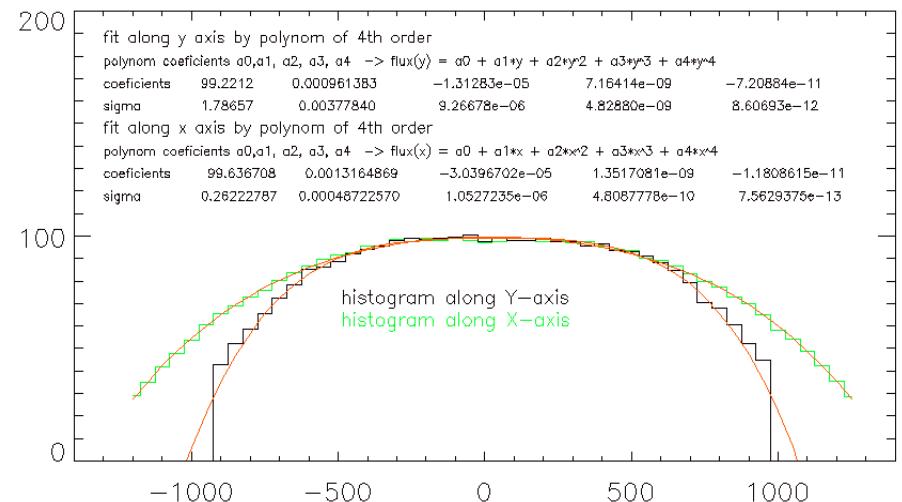
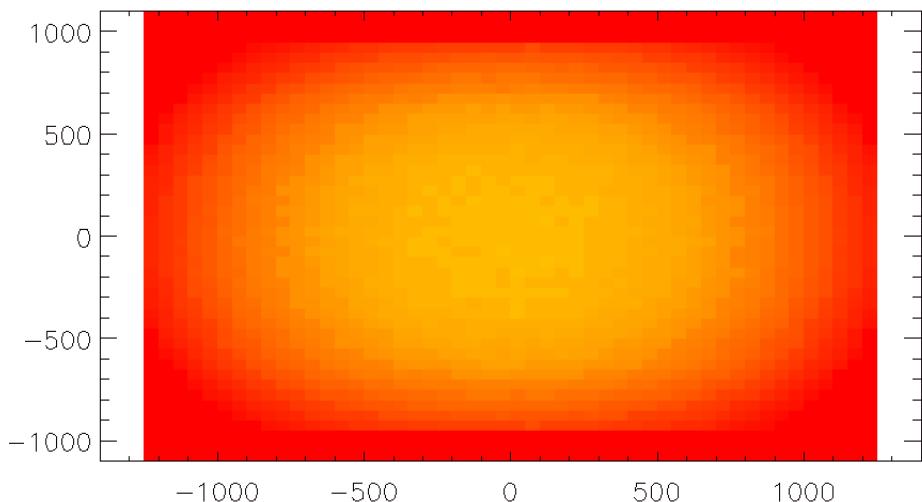
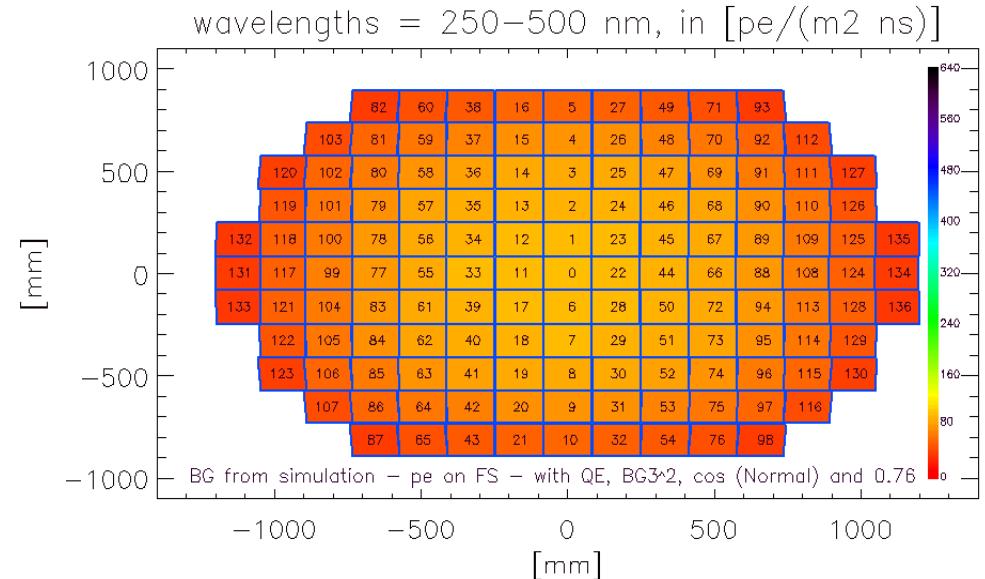
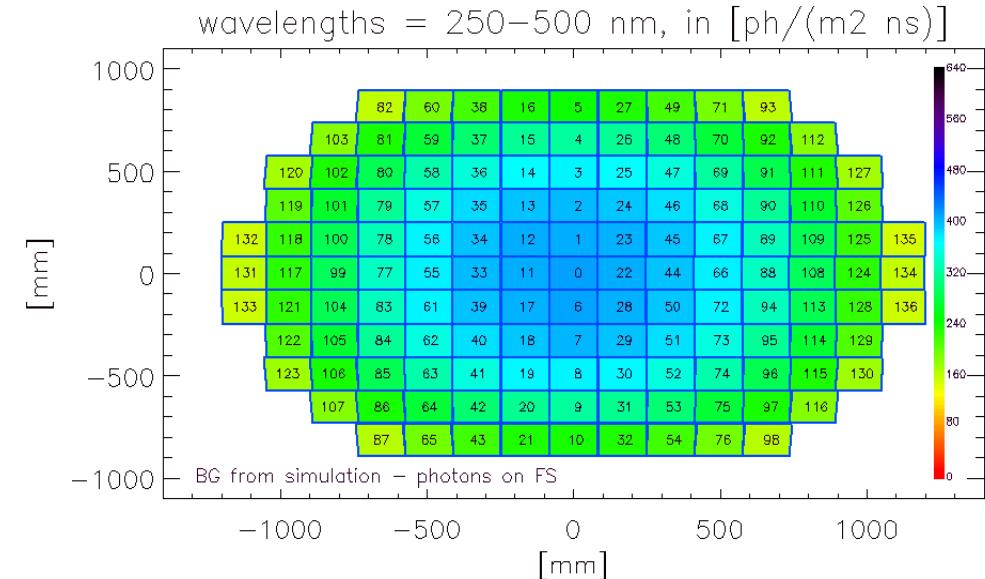
# Incident / zenith angle $\theta = 0^\circ$ , $N = 1\text{e}6$ ph



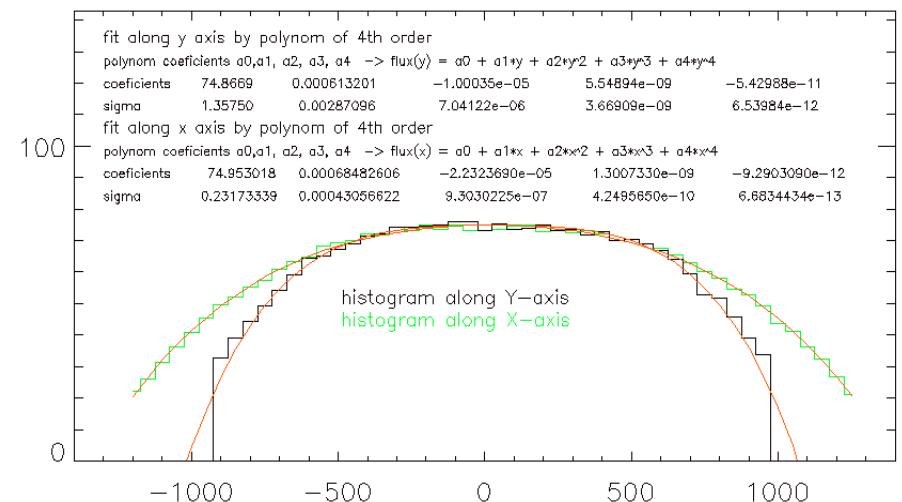
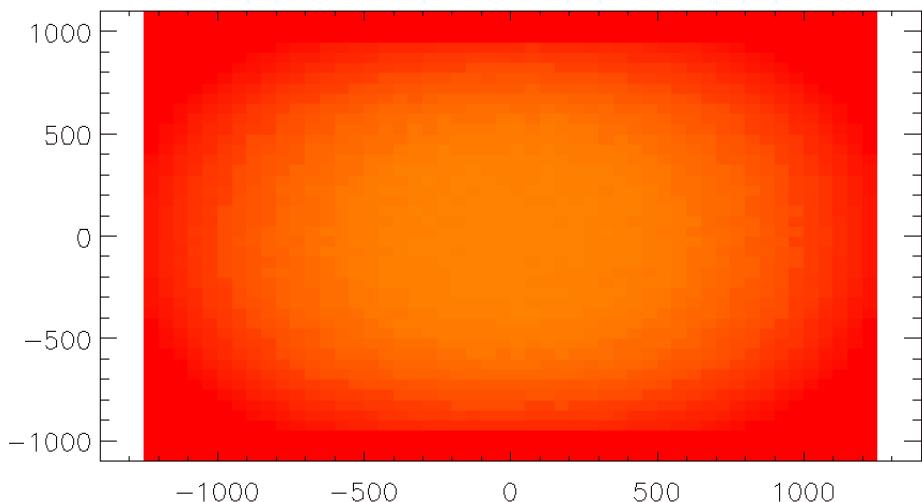
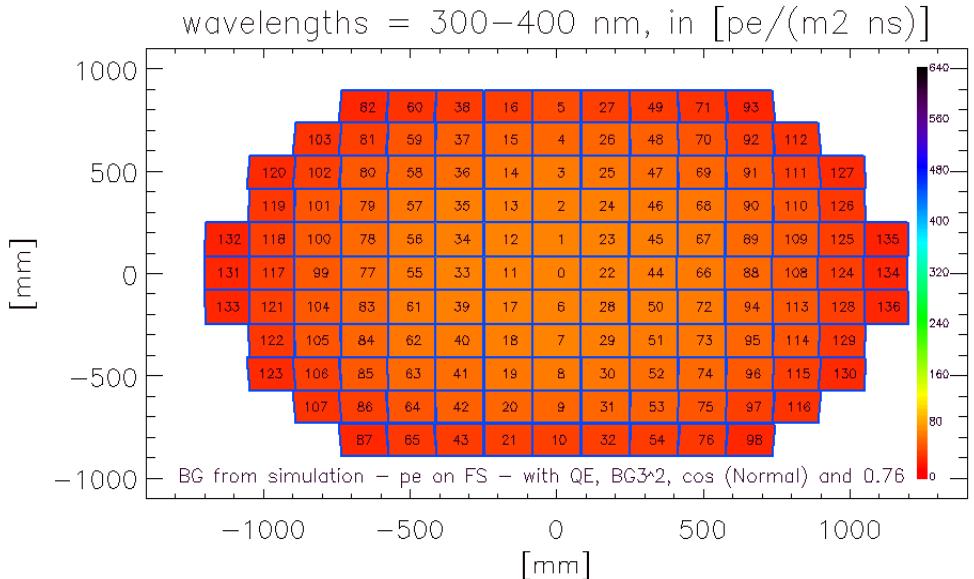
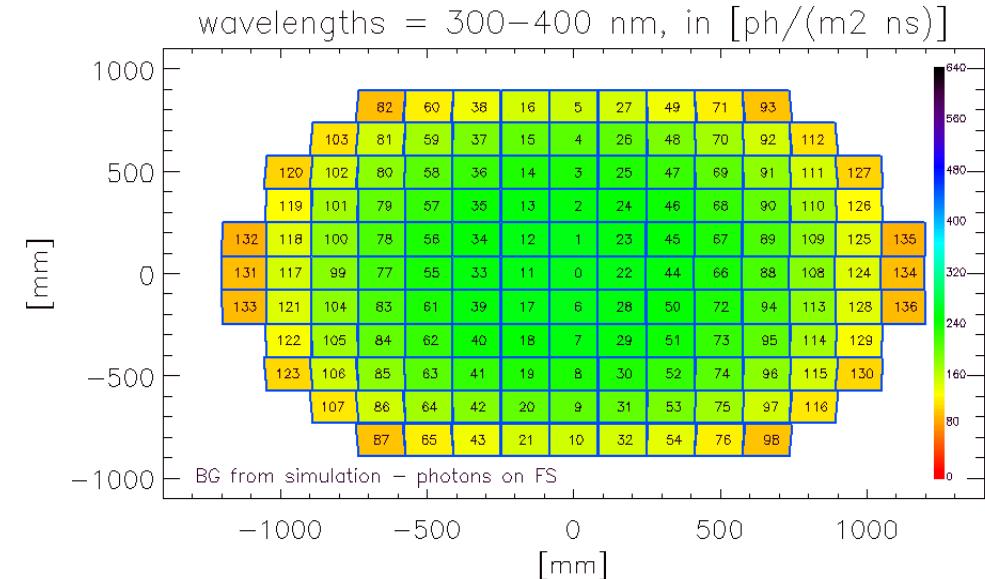
# Incident / zenith angle $\theta = 0^\circ$ , $N = 1\text{e}6 \text{ ph}$



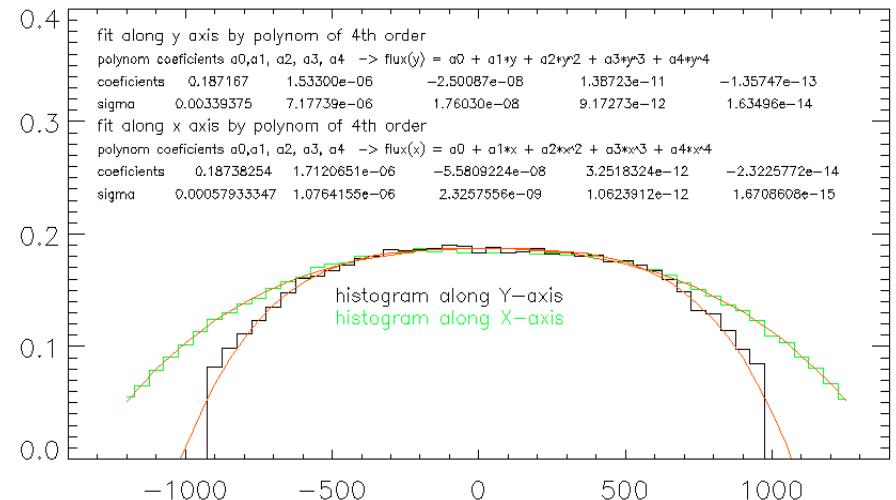
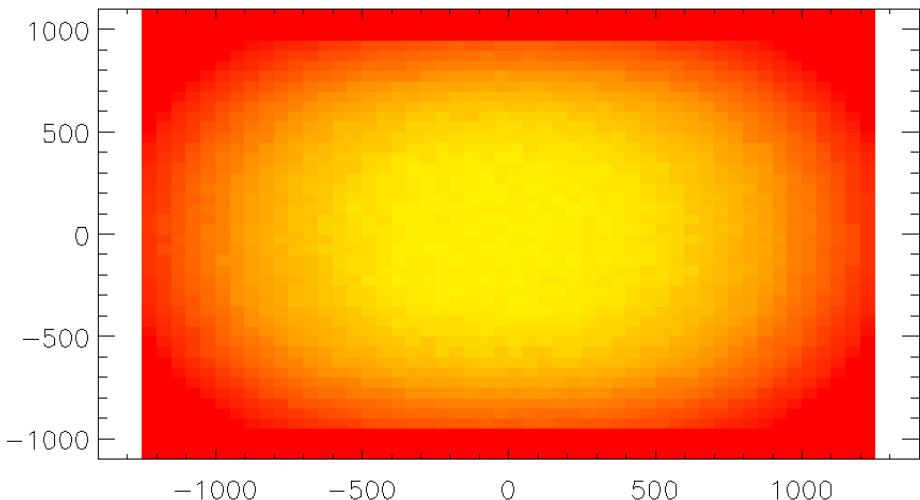
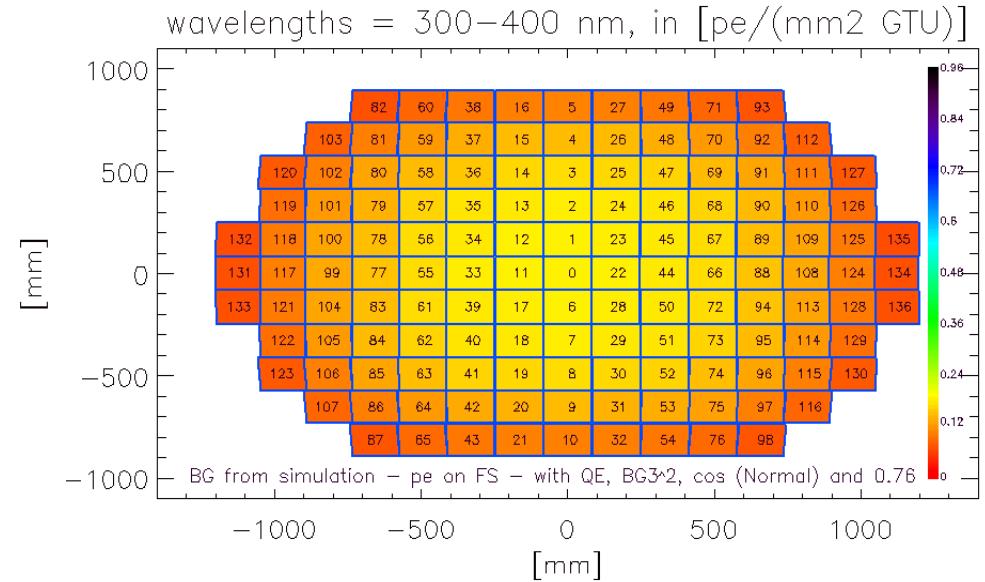
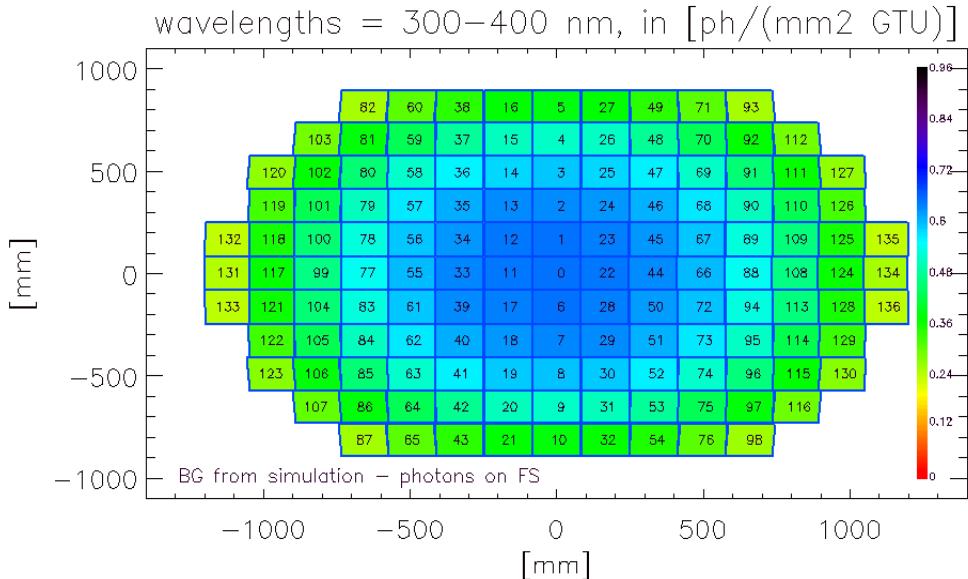
# Uniform injection, 250-500nm, $N_{250-500\text{nm}} = 1\text{e}8 \text{ ph}$



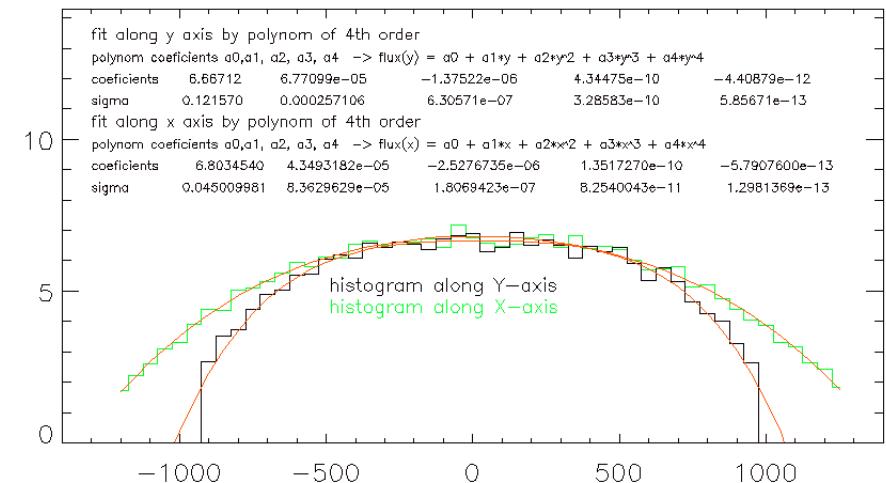
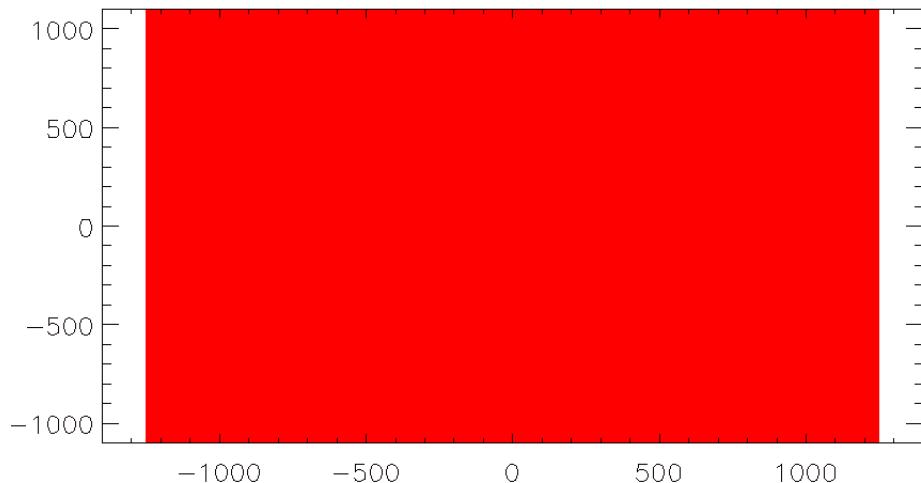
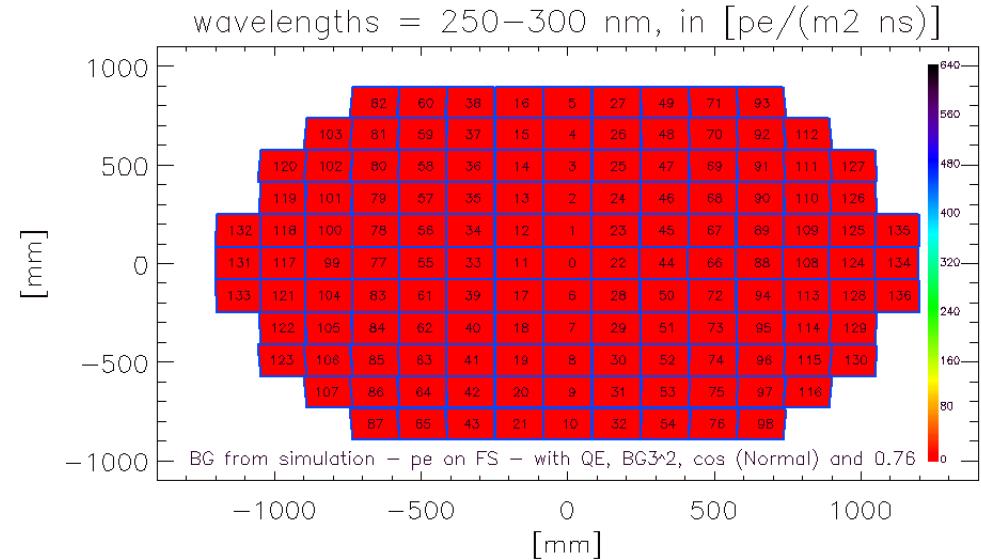
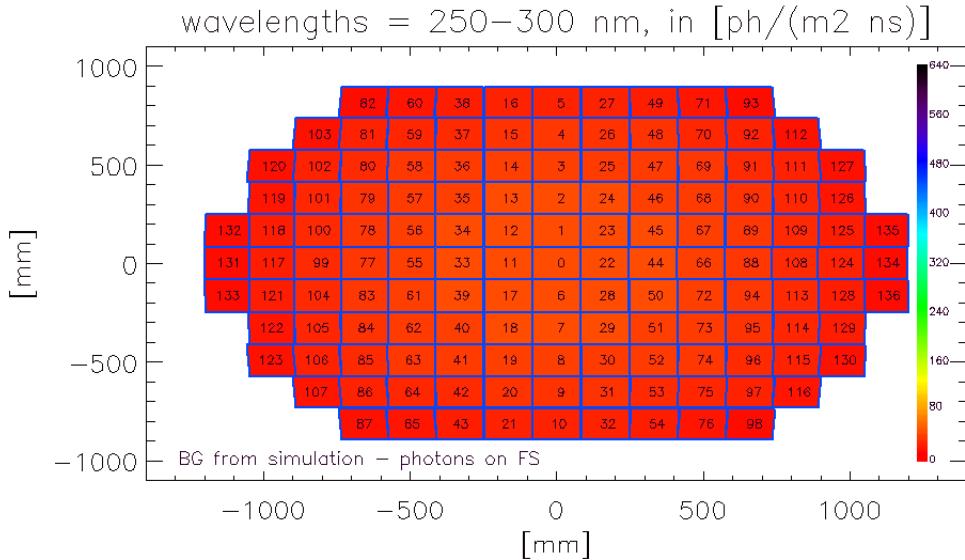
# Uniform injection, 300-400nm, $N_{250-500\text{nm}} = 1\text{e}8 \text{ ph}$



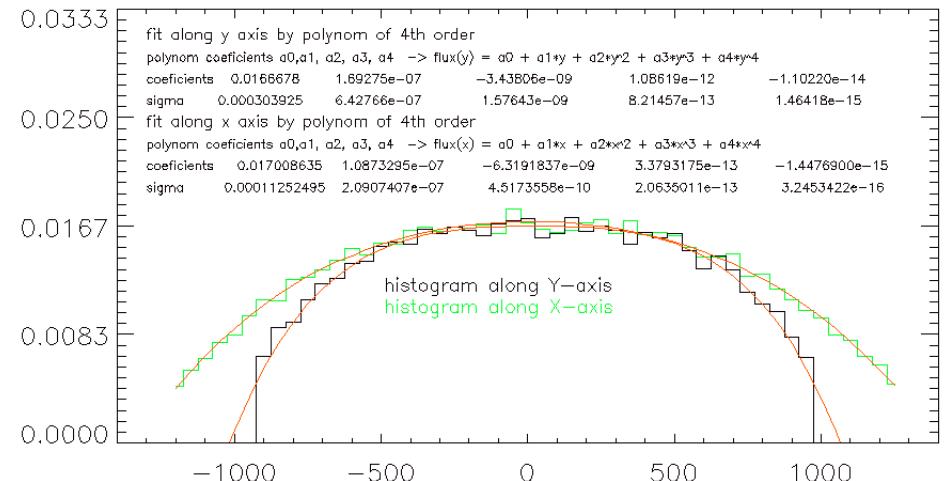
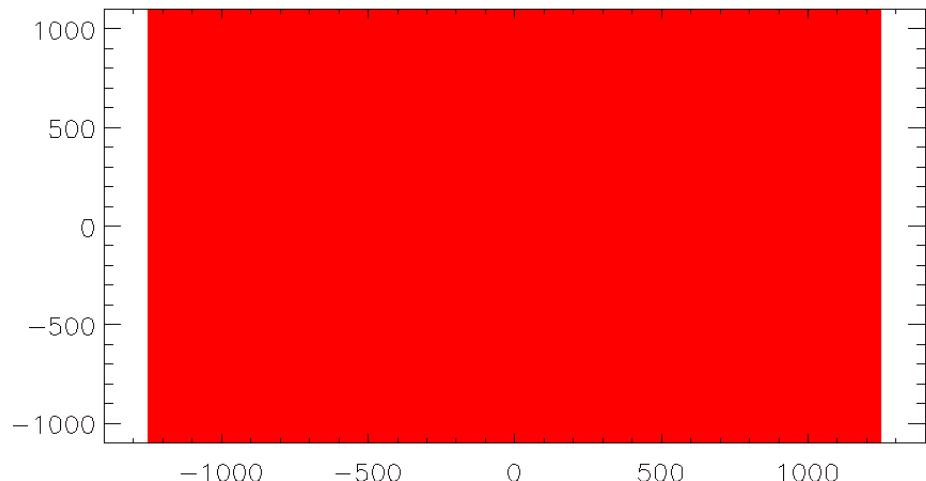
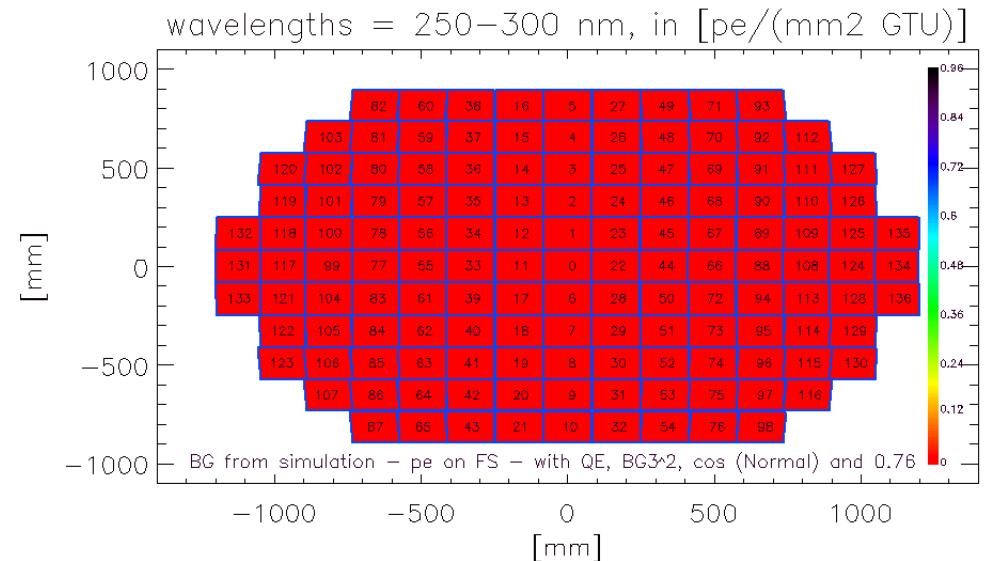
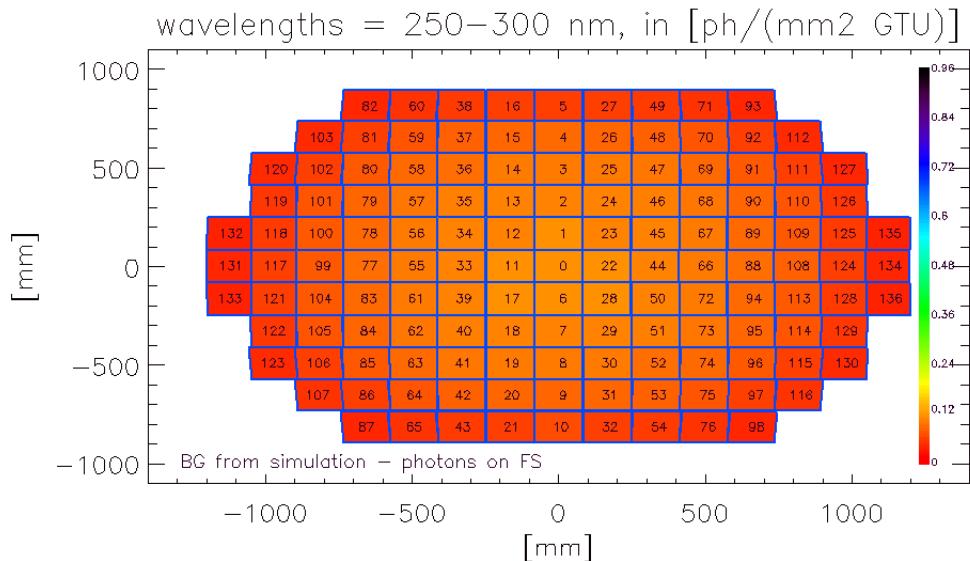
# Uniform injection, 300-400nm, $N_{250-500\text{nm}} = 1\text{e}8 \text{ ph}$



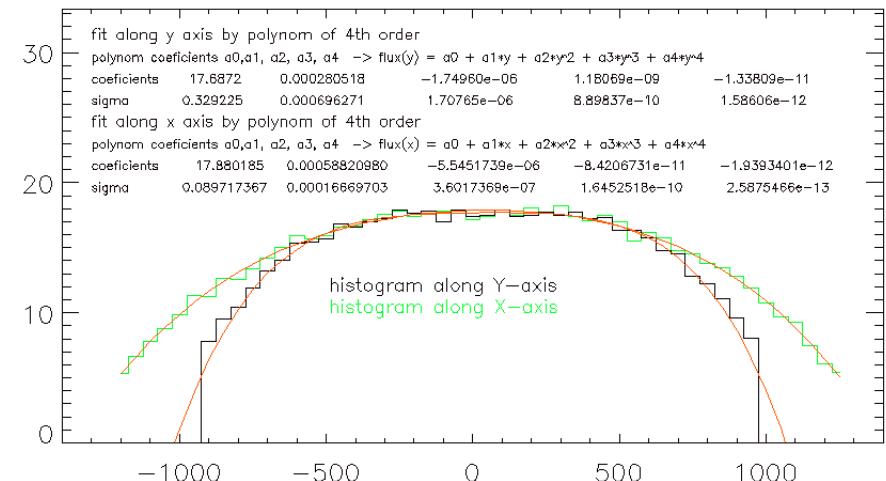
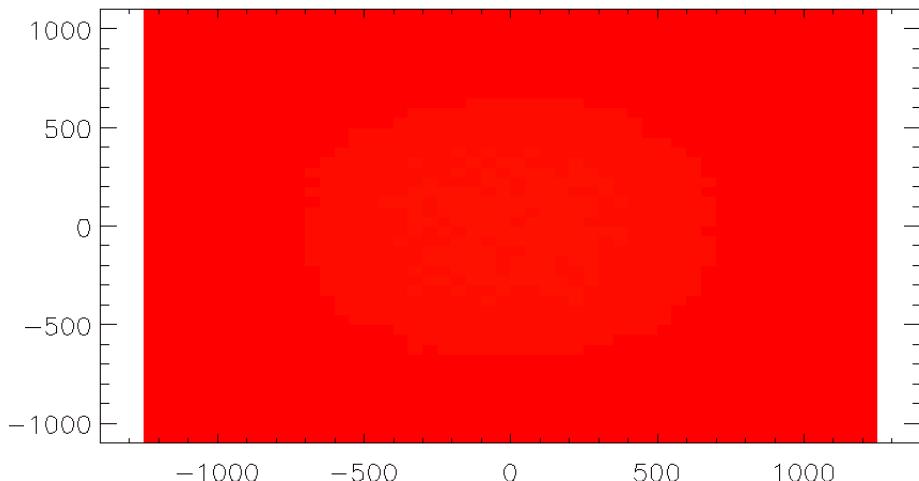
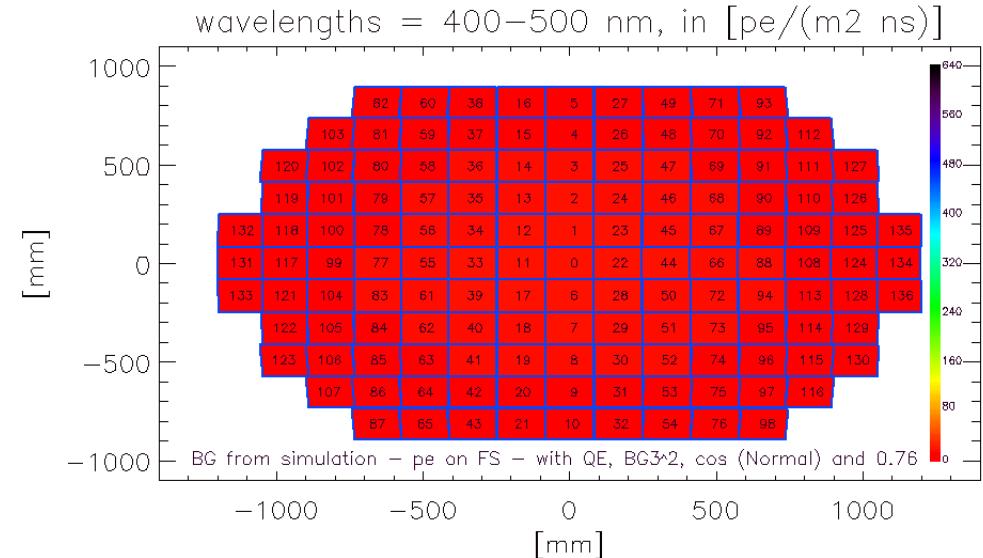
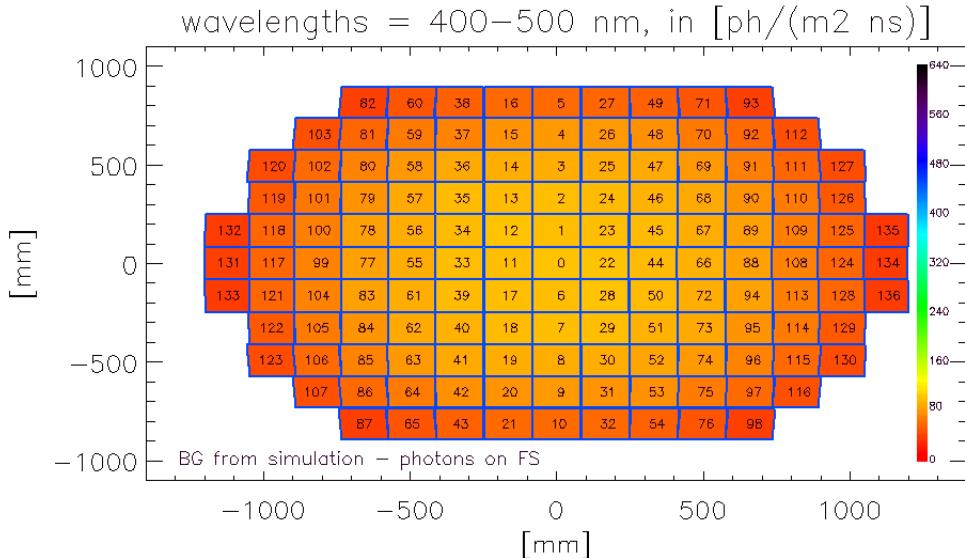
# Uniform injection, 250-300nm, $N_{250-500\text{nm}} = 1\text{e}8 \text{ ph}$



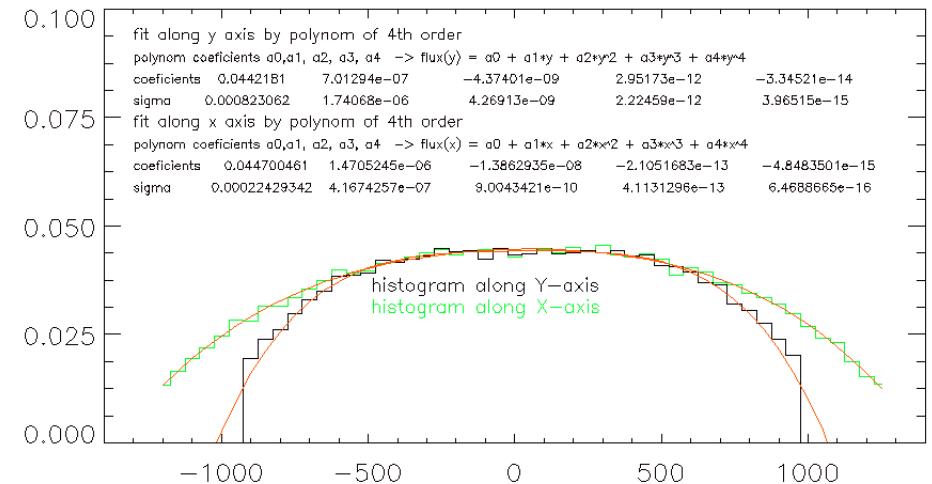
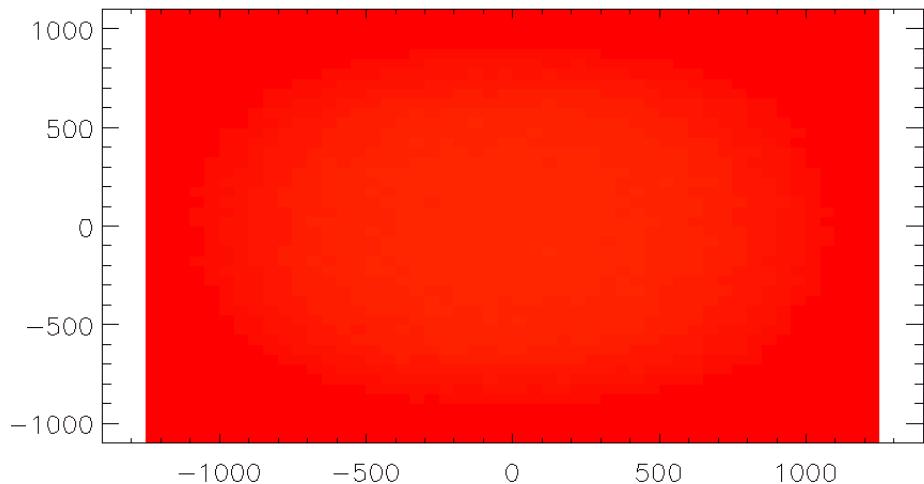
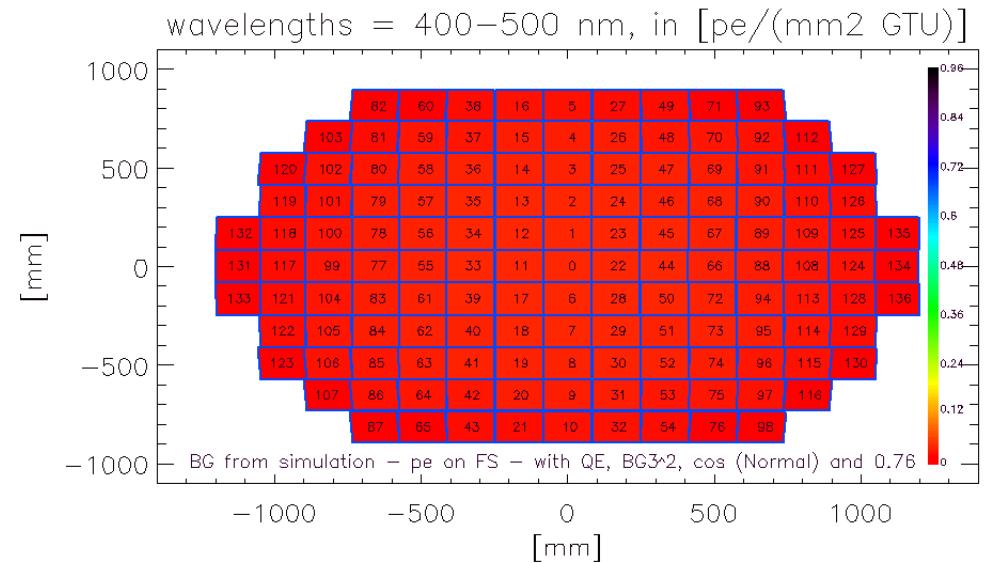
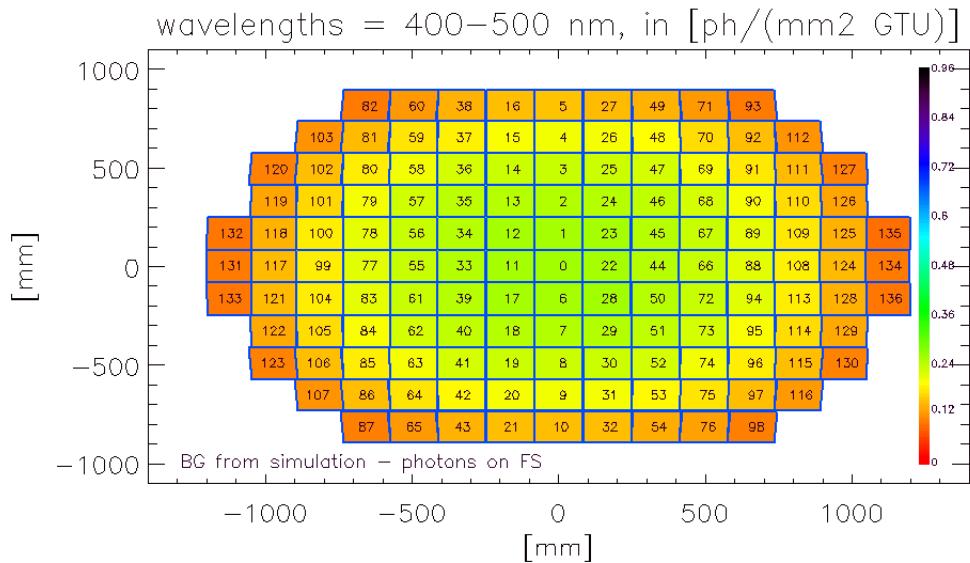
# Uniform injection, 250-300nm, $N_{250-500\text{nm}} = 1\text{e}8 \text{ ph}$



# Uniform injection, 400–500nm, $N_{250-500\text{nm}} = 1\text{e}8 \text{ ph}$



# Uniform injection, 400-500nm, $N_{250-500\text{nm}} = 1\text{e}8 \text{ ph}$



# Uniform injection, 300-400nm, $N_{250-500\text{nm}} = 1\text{e}8 \text{ ph}$ fits / 50 x 50 mm cells values

$$I_{\text{along X axis}} = a_0 + a_1 x + a_2 x^2 + a_3 x^3 + a_4 x^4$$

$$a_0 = 0.18738254$$

$$a_1 = 1.7120651 \cdot 10^{-6}$$

$$a_2 = -5.5809224 \cdot 10^{-8}$$

$$a_3 = 3.2518324 \cdot 10^{-12}$$

$$a_4 = -2.3225772 \cdot 10^{-14}$$

$$I_{\text{along Y axis}} = b_0 + b_1 y + b_2 y^2 + b_3 y^3 + b_4 y^4$$

$$b_0 = 0.187167$$

$$b_1 = 1.53300 \cdot 10^{-6}$$

$$b_2 = -2.50087 \cdot 10^{-8}$$

$$b_3 = 1.38723 \cdot 10^{-11}$$

$$b_4 = -1.35747 \cdot 10^{-13}$$

Table

x [mm]	y [mm]	[pe/(mm <sup>2</sup> GTU)]
-1225	-1225	
25	-25	0.18388644
25	25	0.18695060
...	...	
1225	1225	

- **ESAF module**

- units: pe / (mm<sup>2</sup> GTU)
- for wavelengths range: 300-400 nm
- x and y in mm