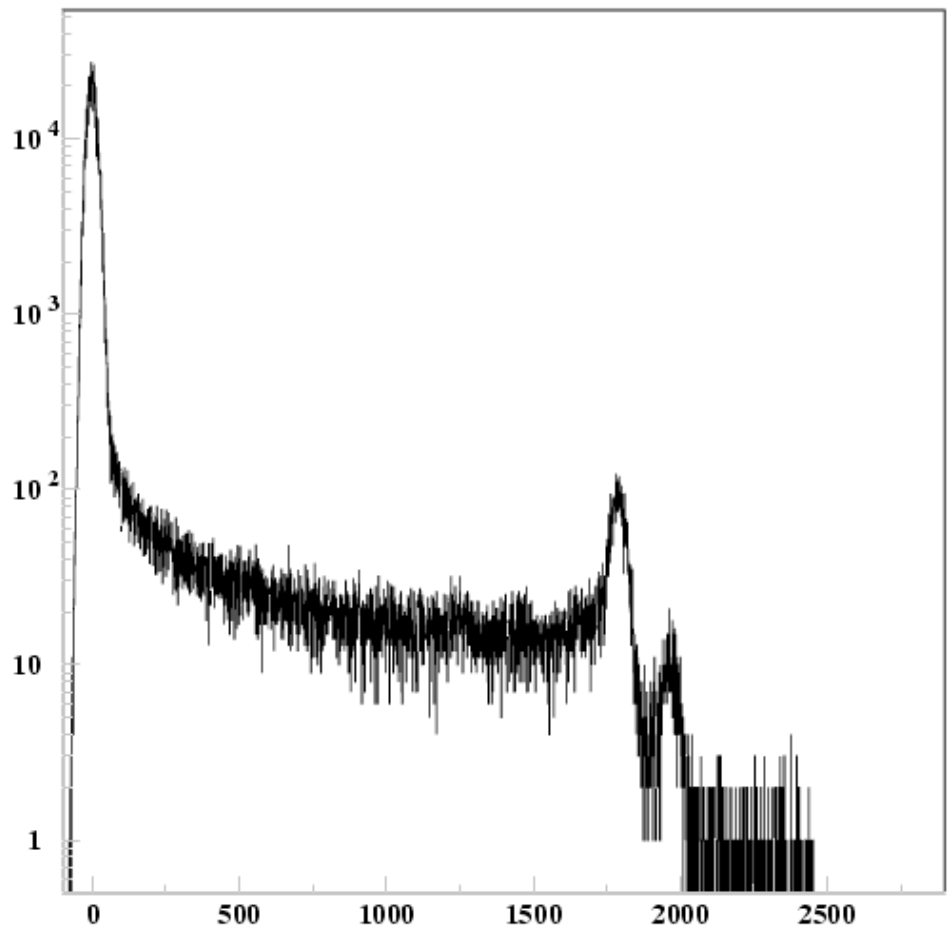
CCD testing results

Juan Estrada

pf-24-24 and pf-24-25

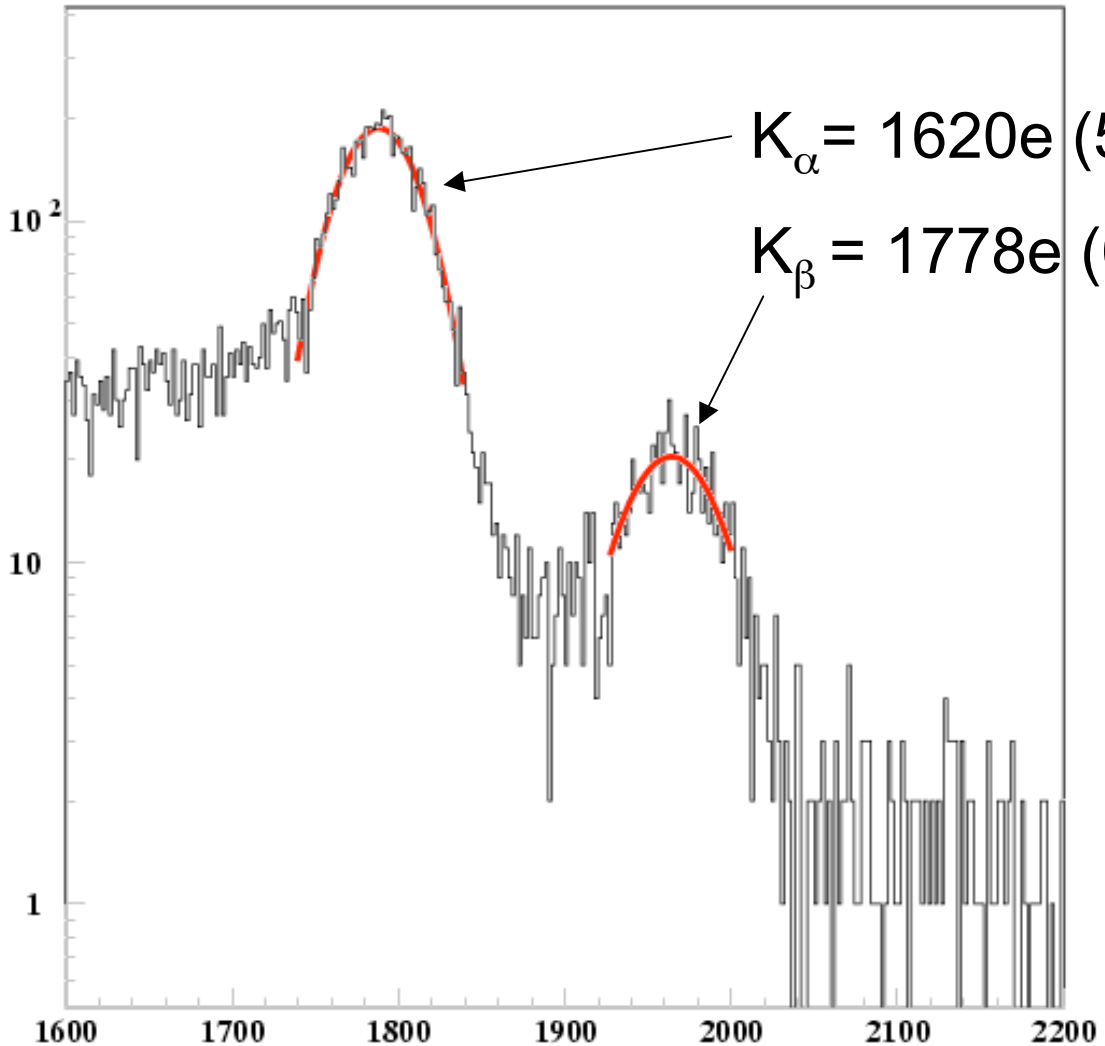
LOT 2A test wafers. Very nice devices !

Use for CTE measurement using Fe55 and compare with the extendend pixel method used for every back illuminated device



X-ray spectrum
Pedestal subtracted

Fitting of the two X-ray peaks



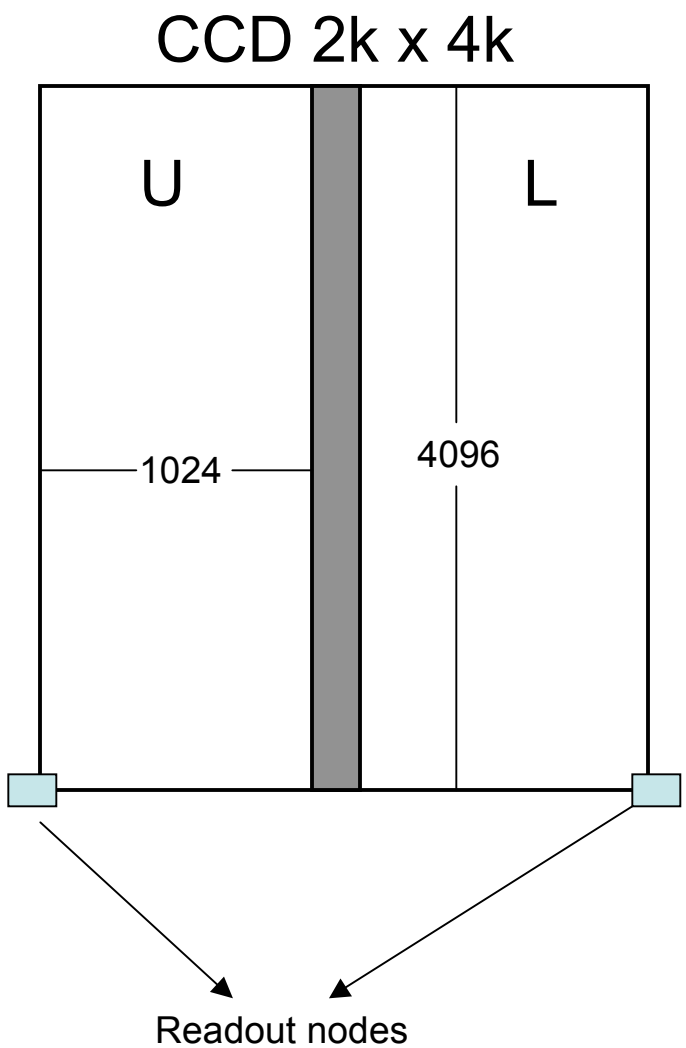
K_α= 1620e (5.9 keV) = 1788 ADU

K_β = 1778e (6.5 keV) = 1964 ADU

Gain= 1.103 ADU/e (K_α)
1.104 ADU/e (K_β)

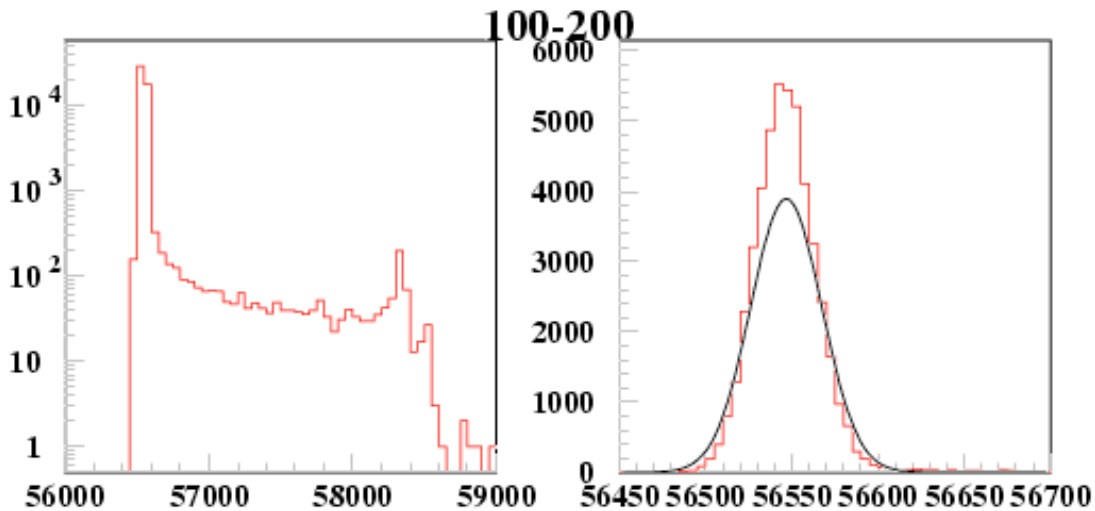
Thanks Kevin Kuk
for the data!

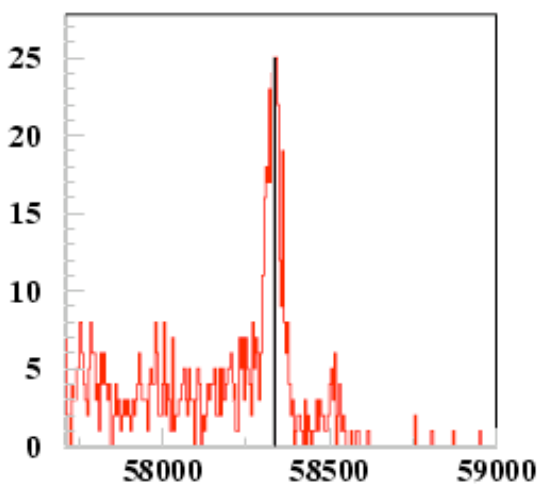
Absolute CTE



The idea is to look at the peak of the Xray spectrum far and near the readout node.

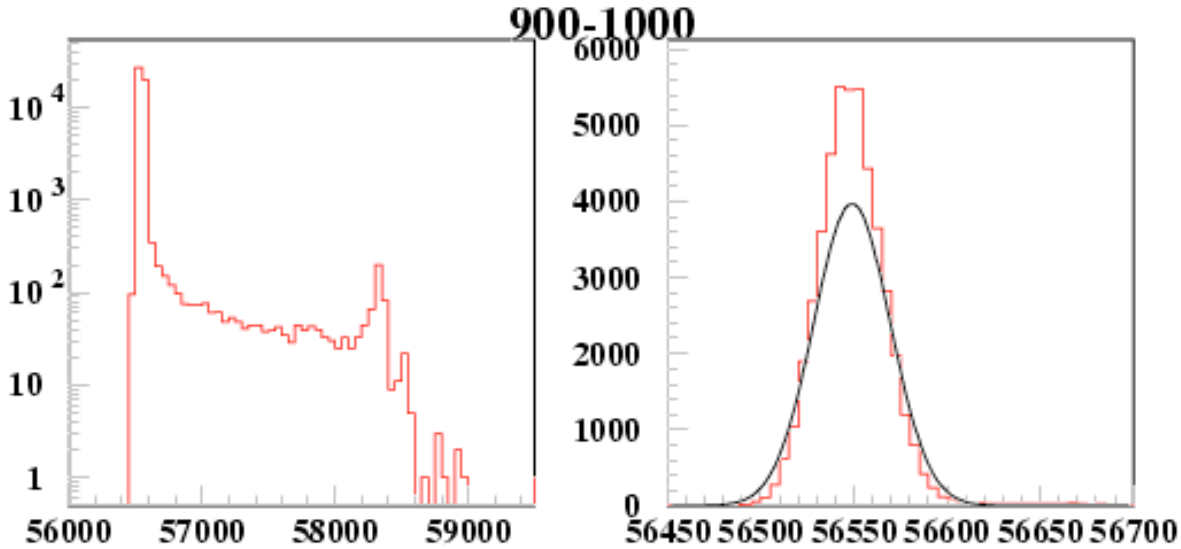
Horizontal CTE

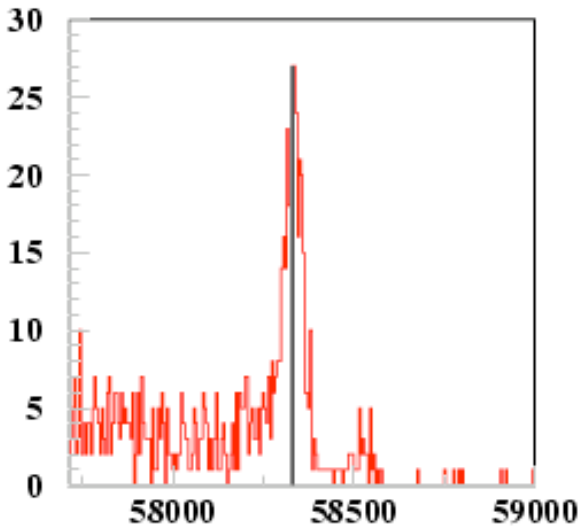




Near the readout node

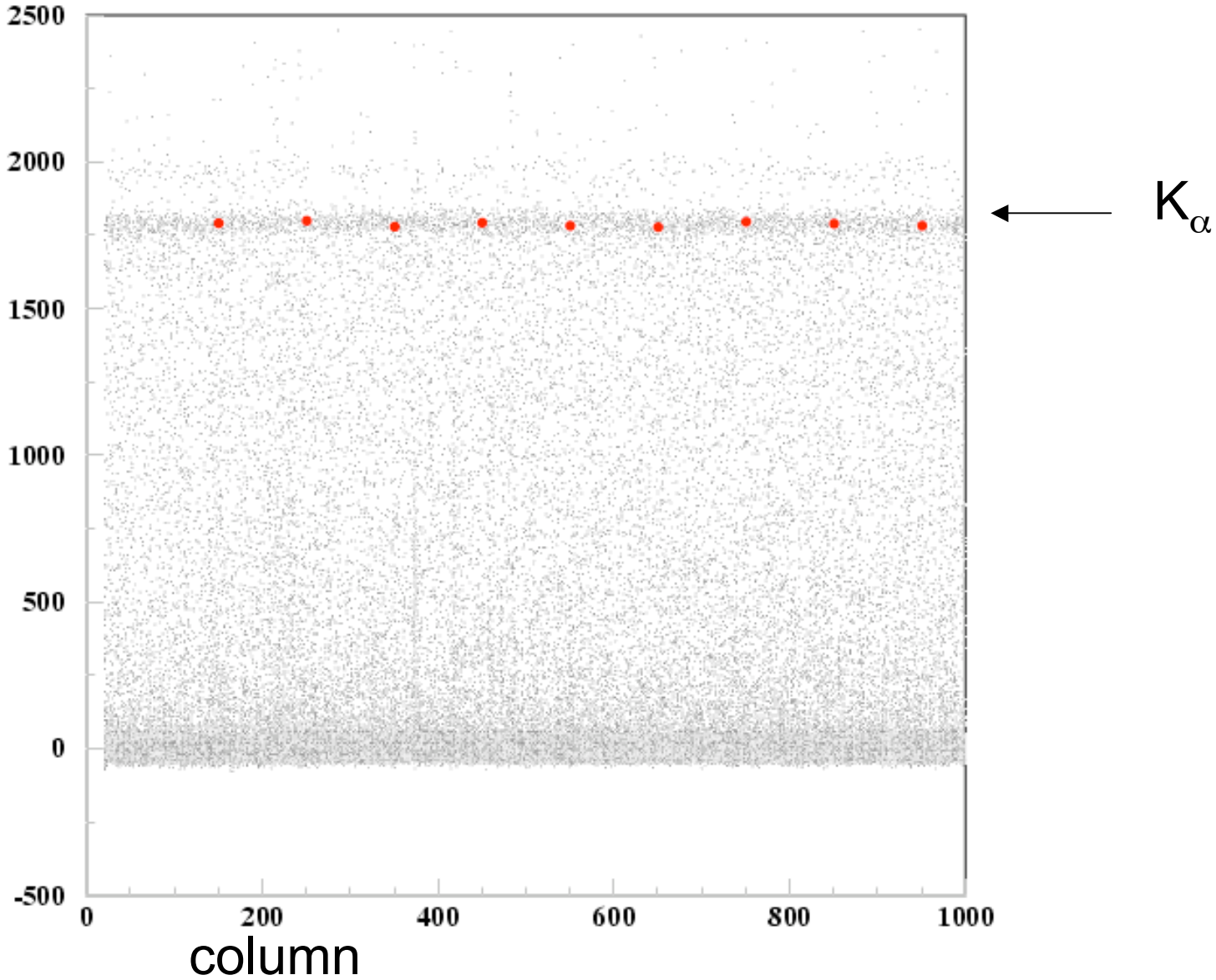
Horizontal CTE



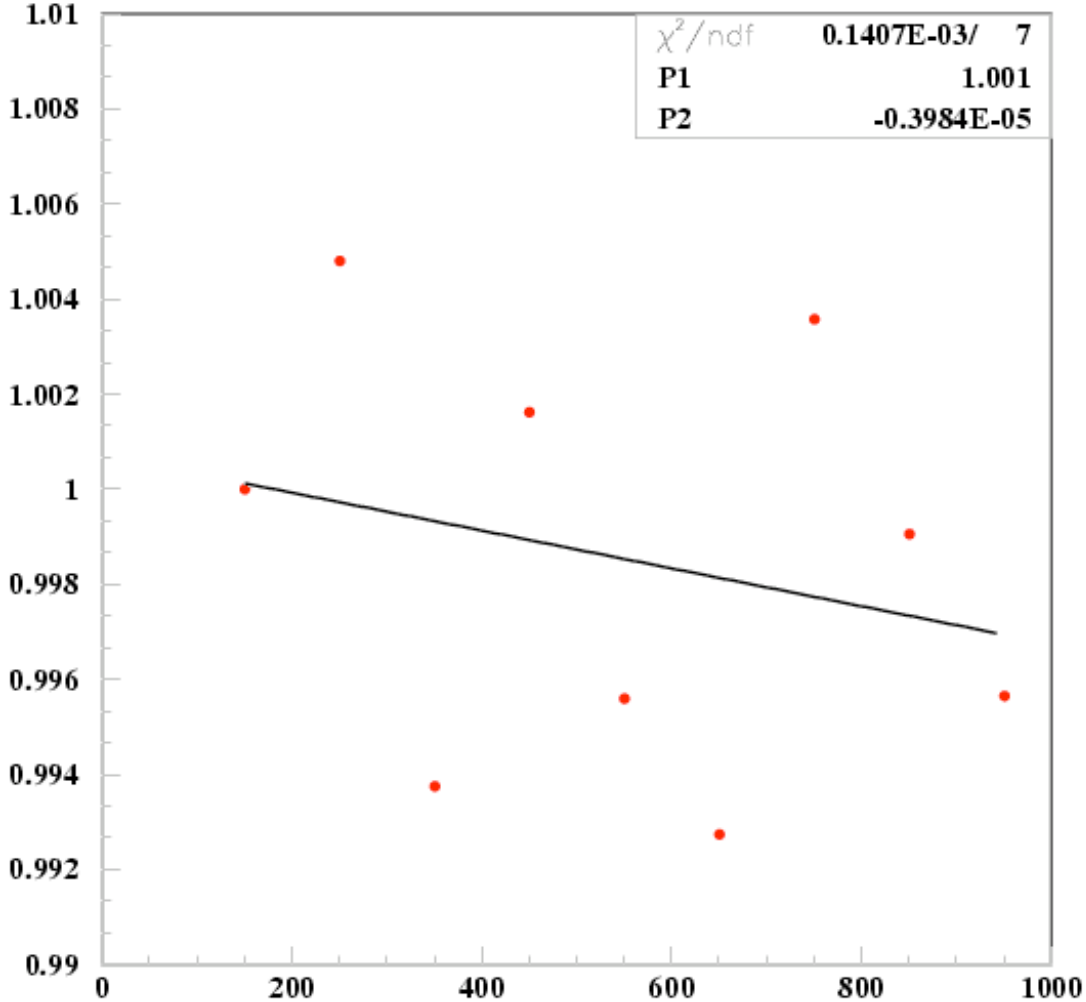


Far from the readout node

Horizontal CTE



H-CTE



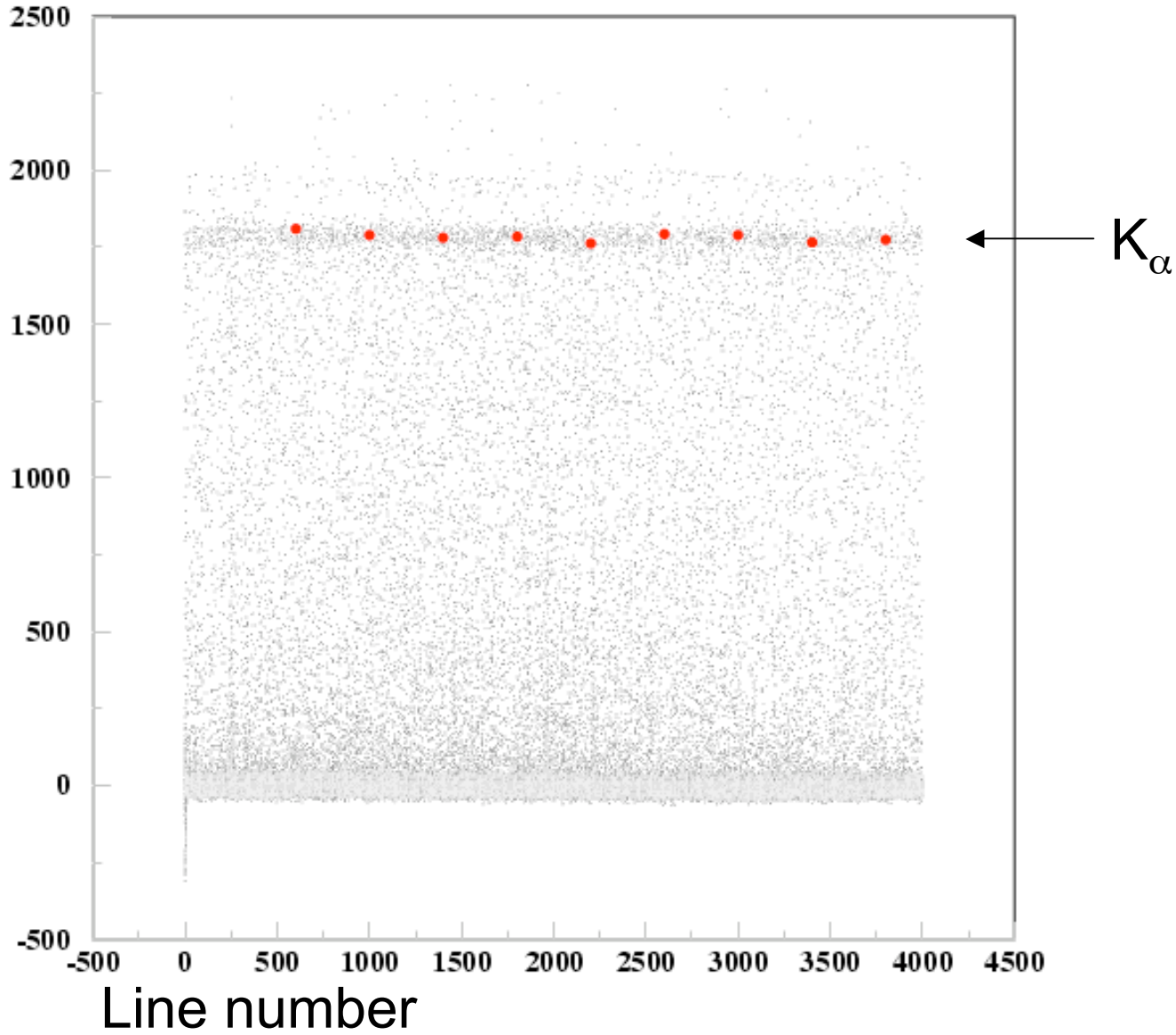
inefficiency :

pf-24-25: 3.9E-6

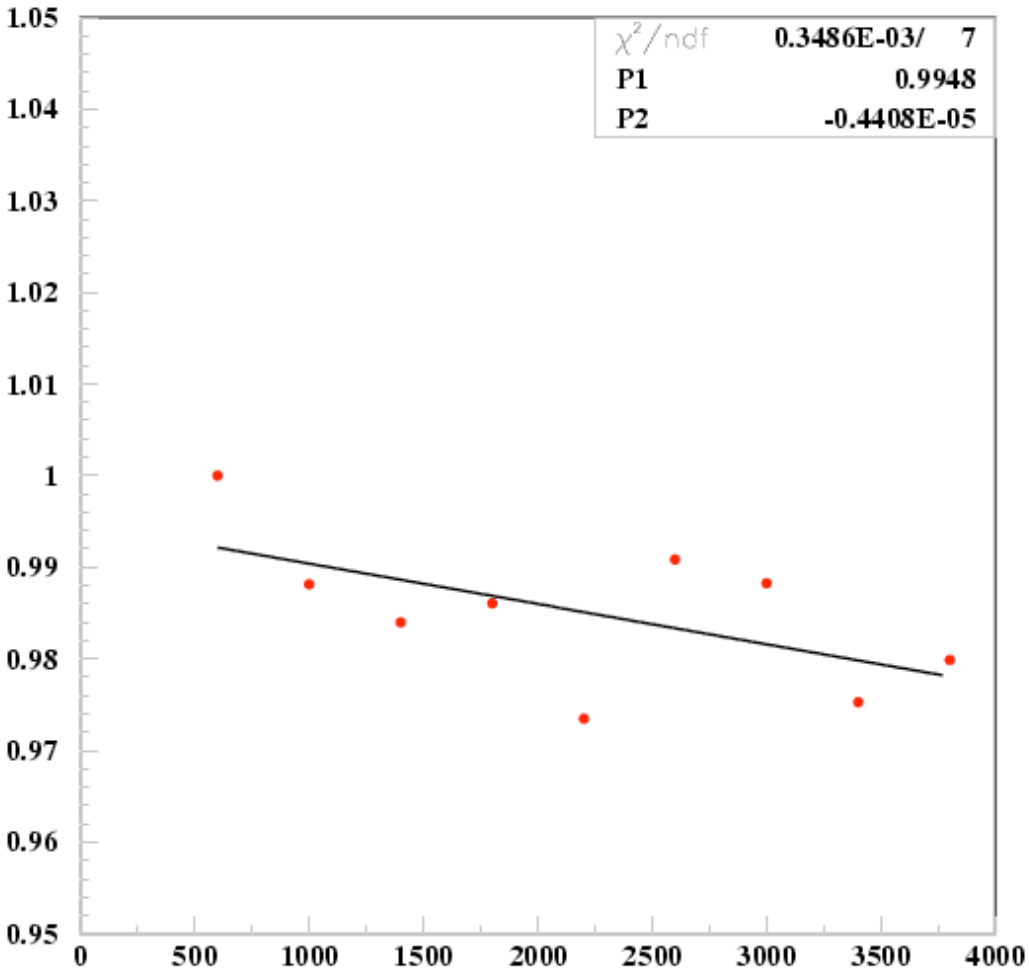
pf-24-24: 3.3E-6

Noise starts to become important in this measurement, which is a good thing!

V-CTE


2500
2000
1500
1000
500
0
-500
-500
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Line number
K_α

V-CTE



inefficiency :

pf-24-25:

pf-24-24: 4.4E-6

Next

- Once we produce the reports for these devices, the idea is to compare the results for the CTE measurements using the two methods. (We have done this before, very early in our learning curve.)

- Now the main concern for CCD testing is the time between exposures. The ERASE mechanism has not yet been optimized for time in out setup…(is 10 sec should be about 1 sec)