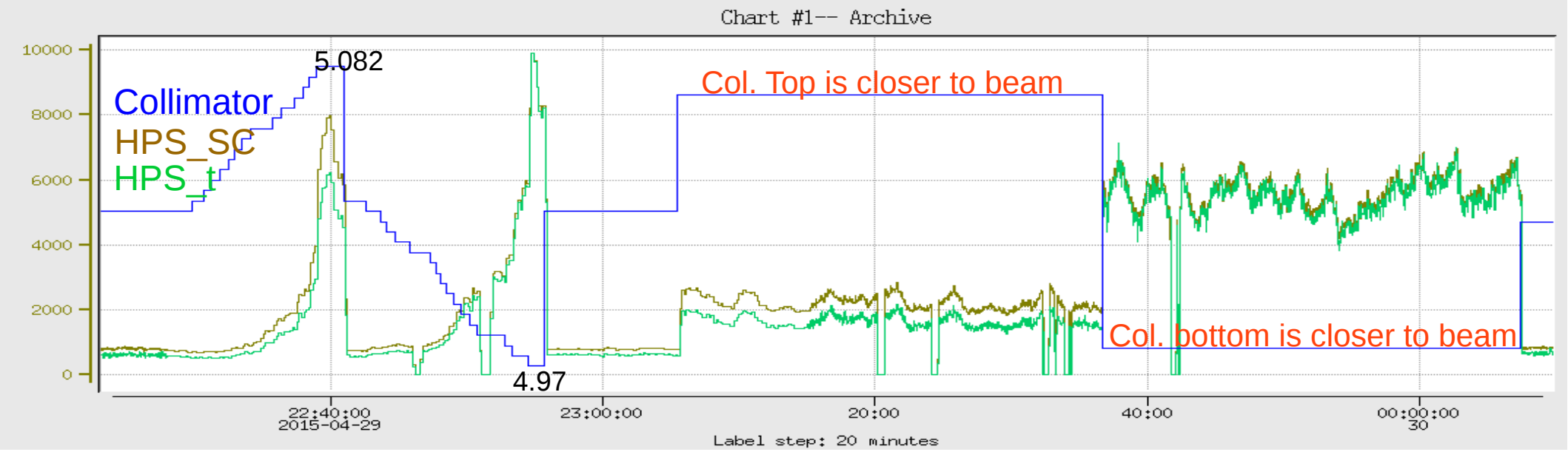
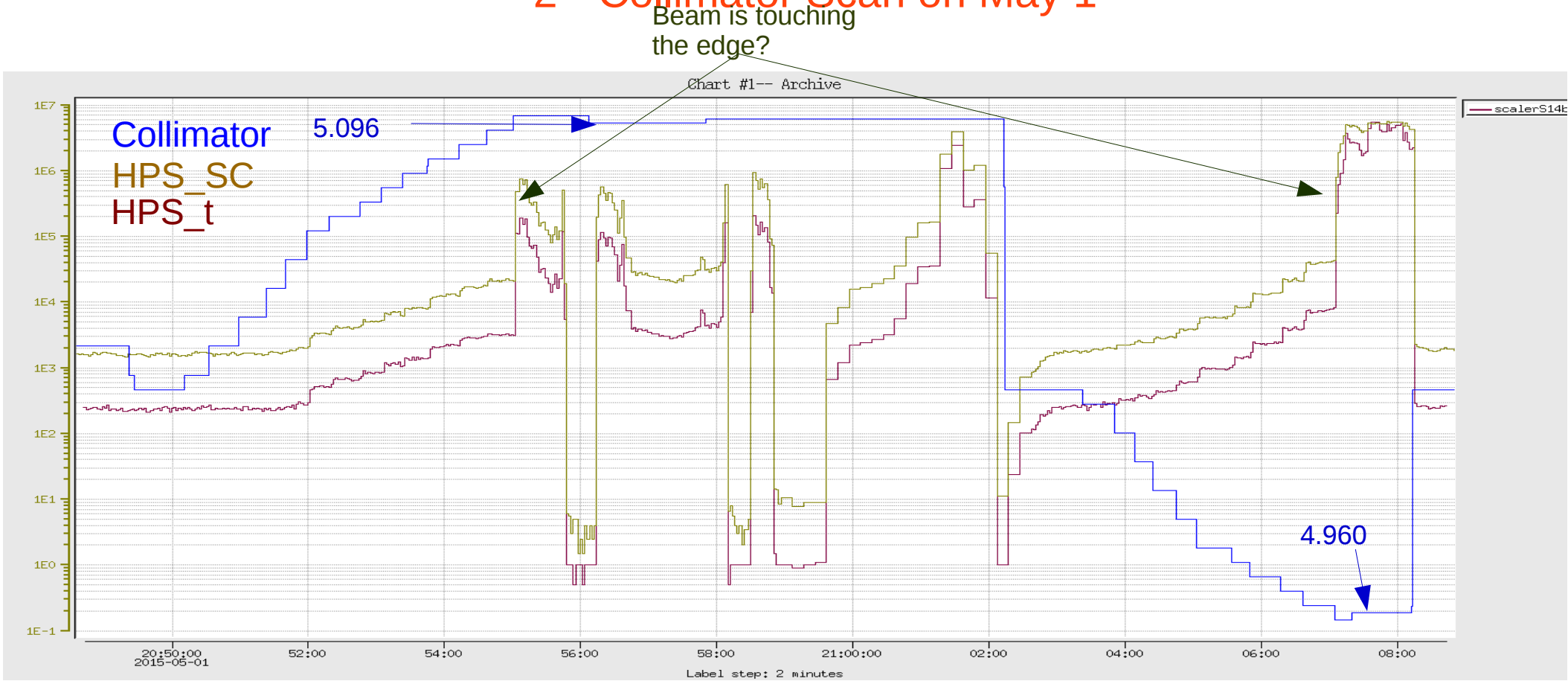
1st Collimator Scan on Apr 29



Proportion between HPS_t and HPS_SC changes depending from which side the collimator approaches to the beam.

The center is calculated as 5.022. then collimator moved down and up by 0.049” == 1.2446mm.
This corresponds to the collimator positions of 5.071 and 4.973.
Probably the center of the collimator is calculated not correctly, because rates 3 times differ with These positions.

2nd Collimator Scan on May 1



This tells the collim. center to be at 5.028
Hole size = (5.096 – 4.96)*25.4 = 3.4544 mm

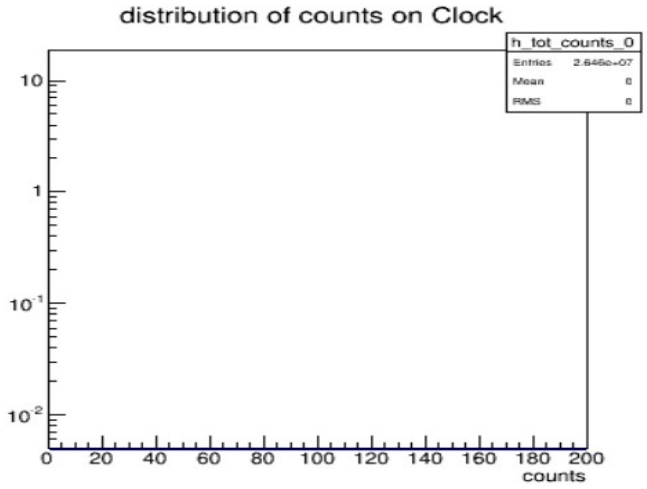
Collimator Width (mm)								
3.45								
			What Should be the motor position in order to The corresponding edge to be at the beam		Where we put the corresponding Edge For Beam trip studies		Distance of the edge from The beam (mm)	
	Harp Scan Value (mm)	Center	Bottom edge	Top Edge	Bottom edge	Top Edge	Bottom edge	Top Edge
04/29/15	43.2522	5.022	4.9540866142	5.0899133858	4.973	5.071	0.4804	-0.4804
05/01/15	43.4708	5.028	4.9600866142	5.0959133858				
04/29/2015 Calculated as Harp position differences	0.2186	5.01938583	4.9514724409	5.0872992126	4.973	5.071	0.5468	-0.414

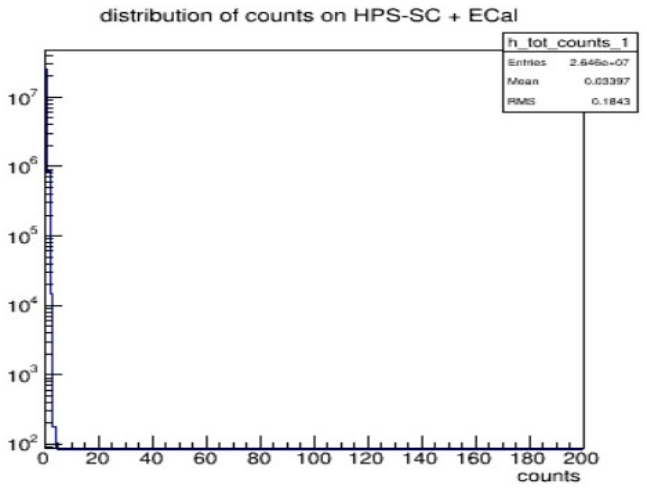
This seems is not in agreement with Apr 29 measurement, because Bottom edge of the collimator showed higher rates one Halo counters, whereas this numbers show bottom edge was further from the beam.

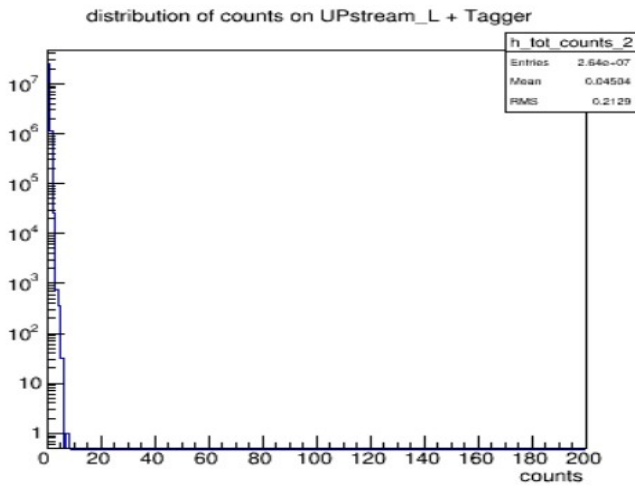
We were thinking that the collimator is 3mm, and with this in mind we put it about 250um form the beam, but now since looks it is 3.45 mm, the 250 um will translate into more than 400 um.

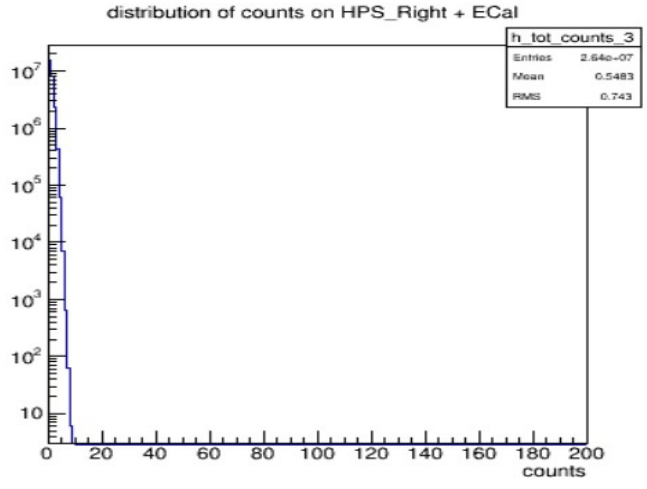
Collimator is at 5.071
w2r_20150429_230607.root

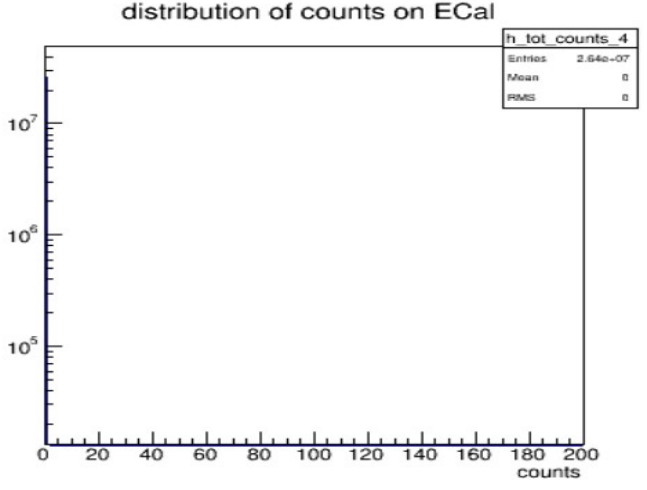
No potential beam motion is noticable





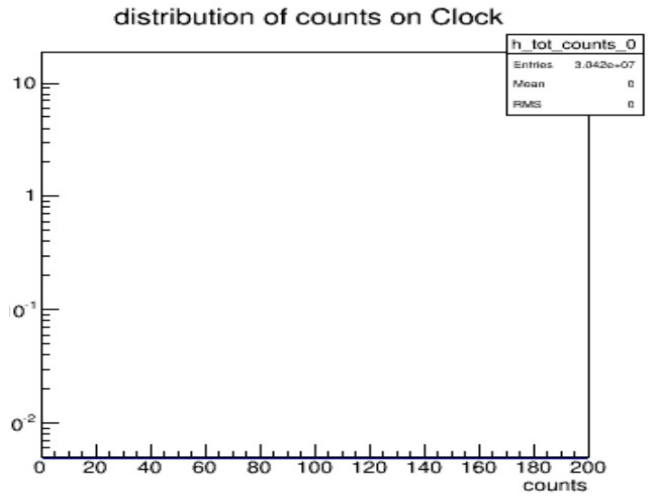


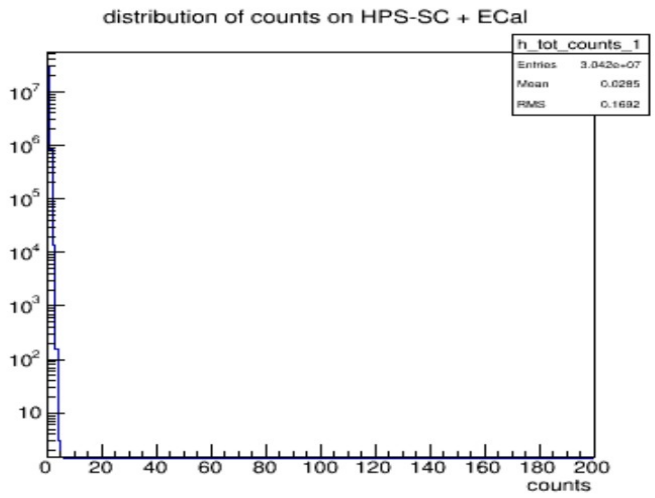


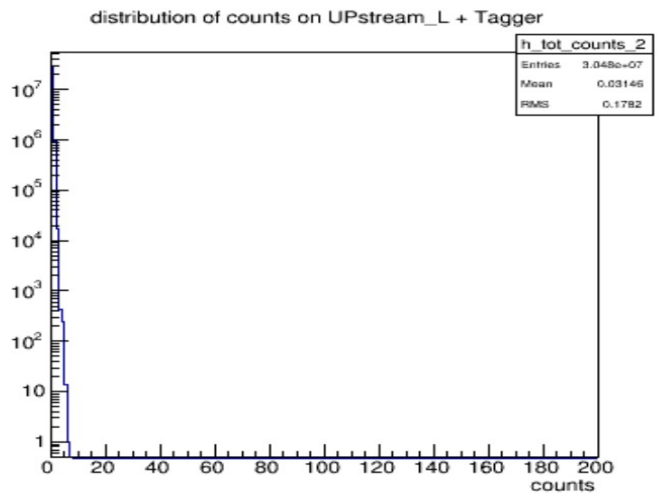


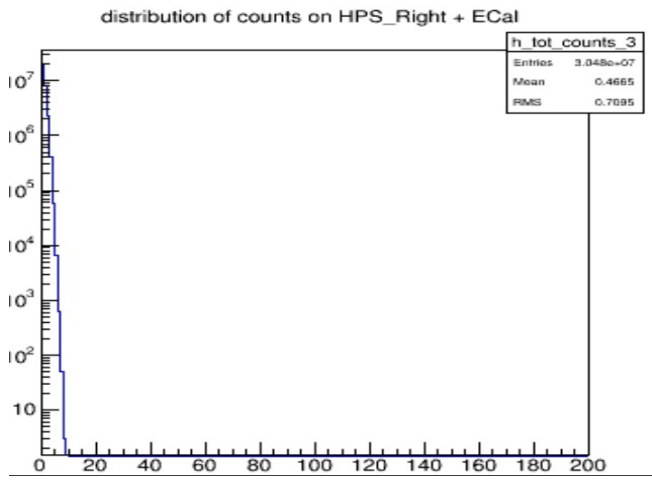
Collimator is at 5.071
w2r_20150429_232002.root

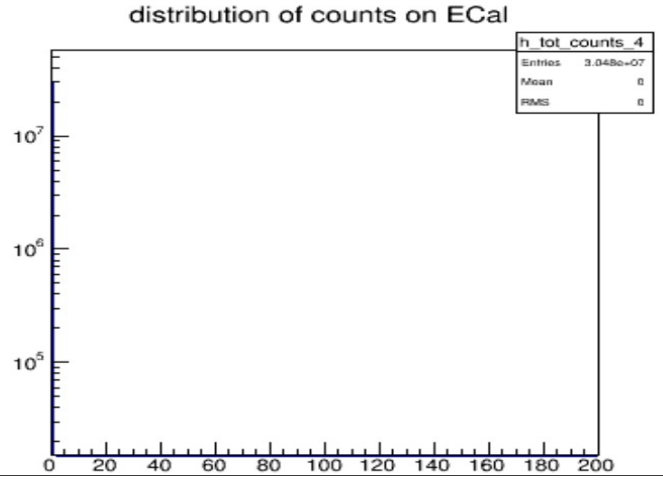
No potential beam motion is noticable



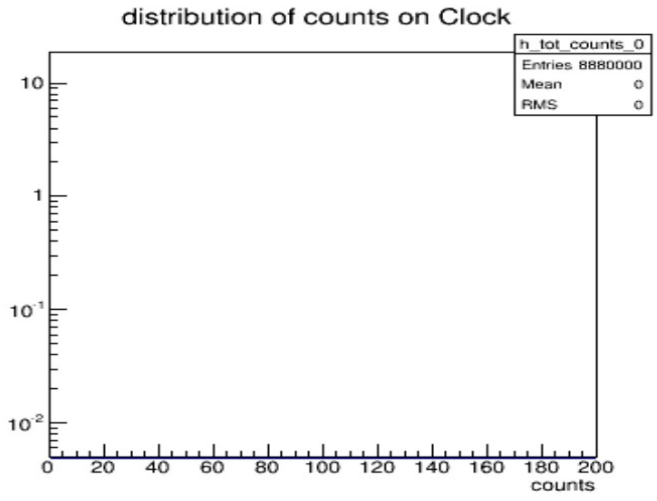


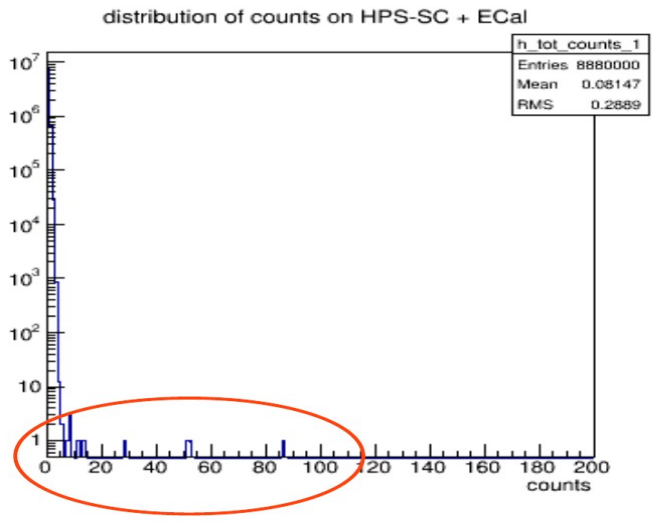


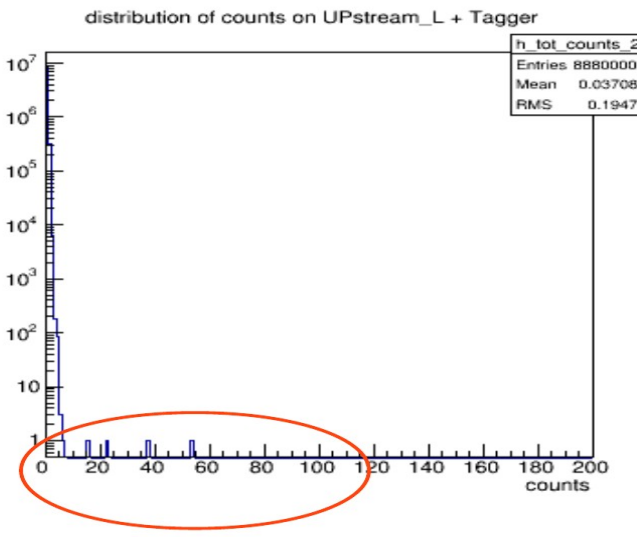


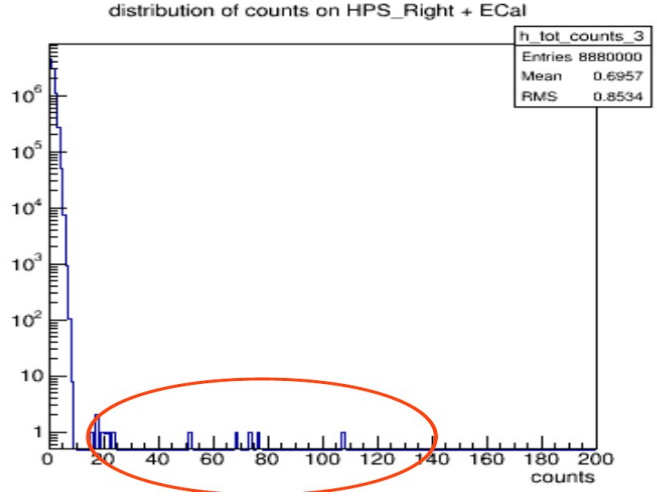


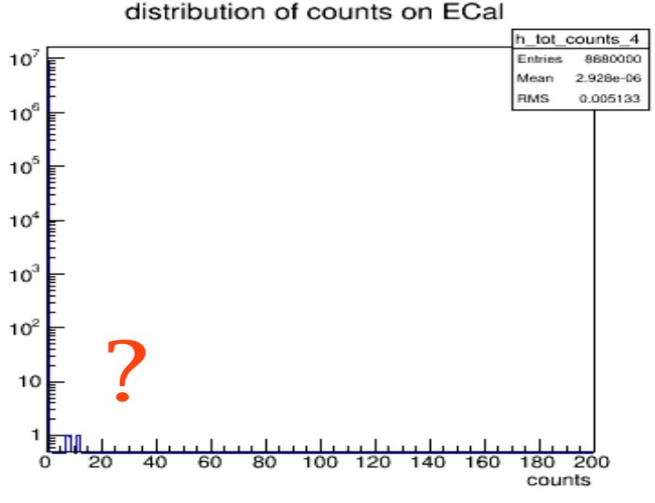
Collimator is at 4.973
w2r_20150429_233717.root

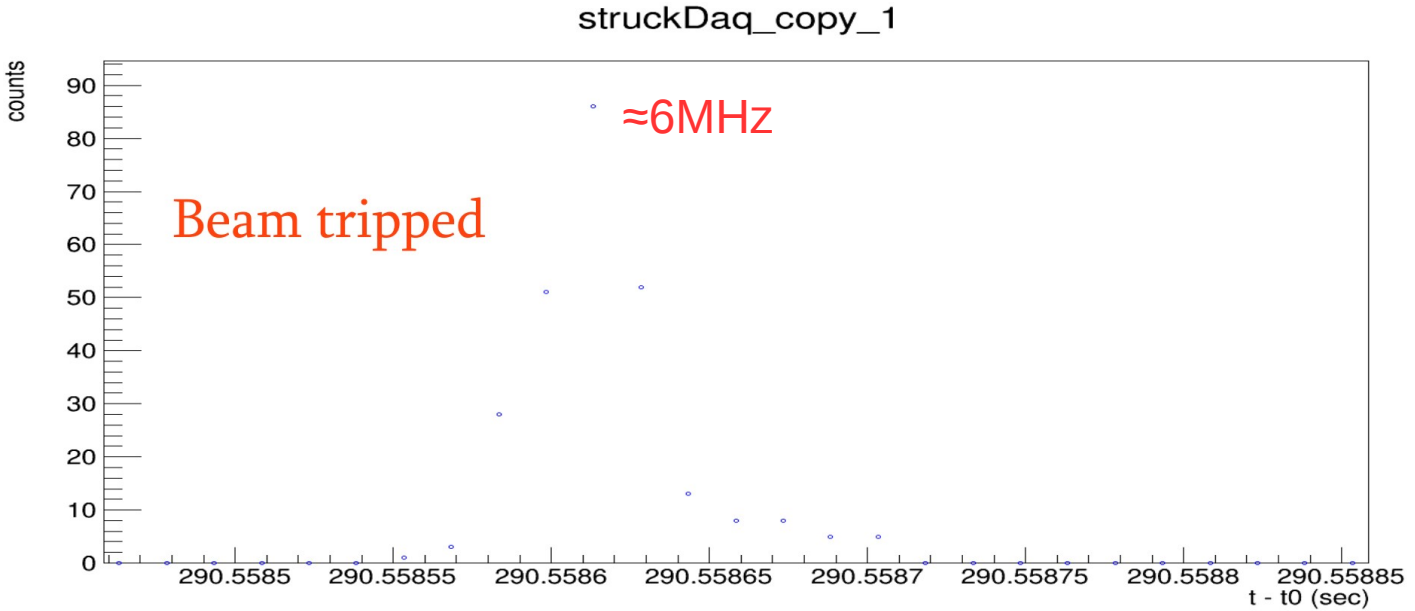


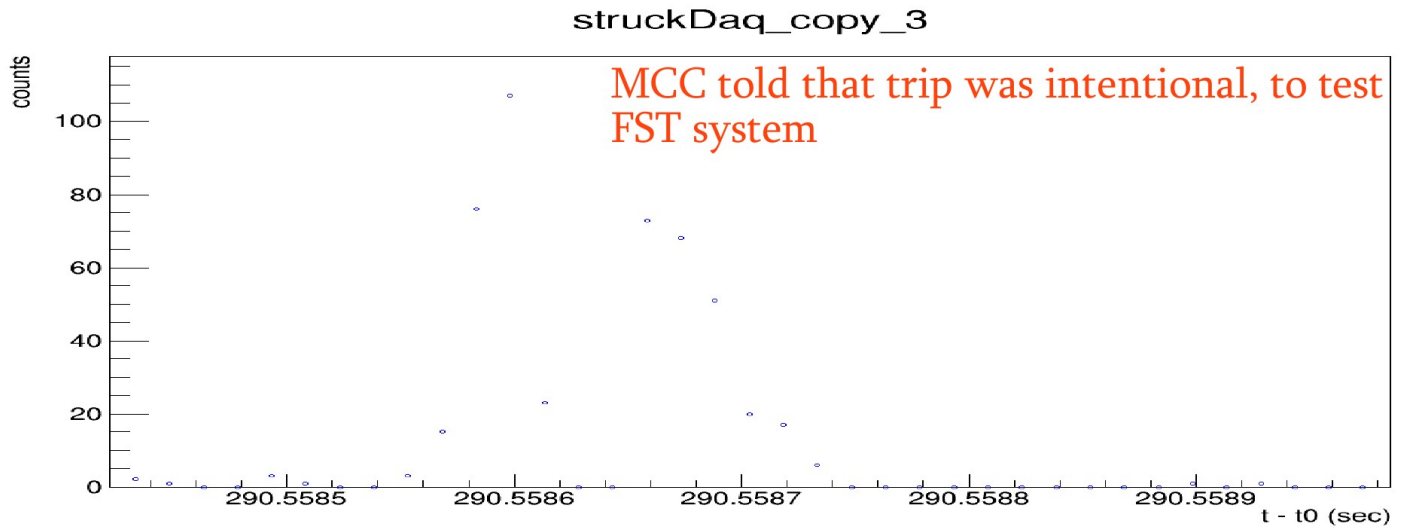






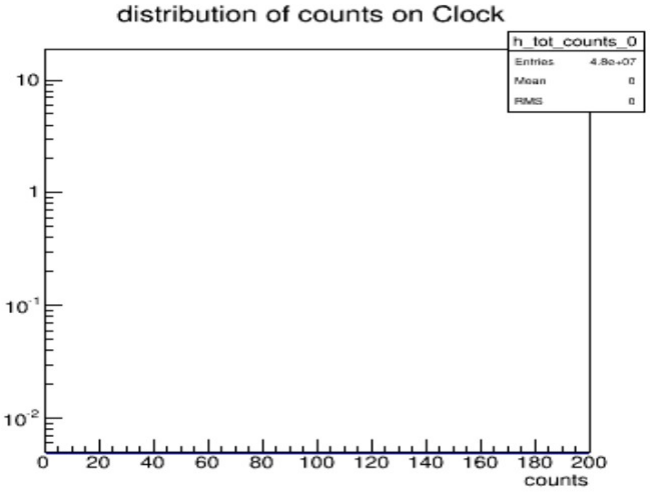


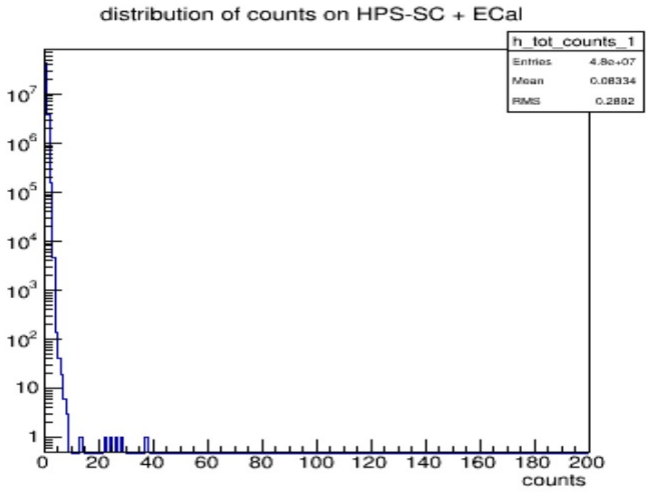

struckDaq_copy_1
counts
90
80
70
60
50
40
30
20
10
0
≈6MHz
Beam tripped
290.5585
290.55855
290.5586
290.55865
290.5587
290.55875
290.5588
290.55885
t - t0 (sec)

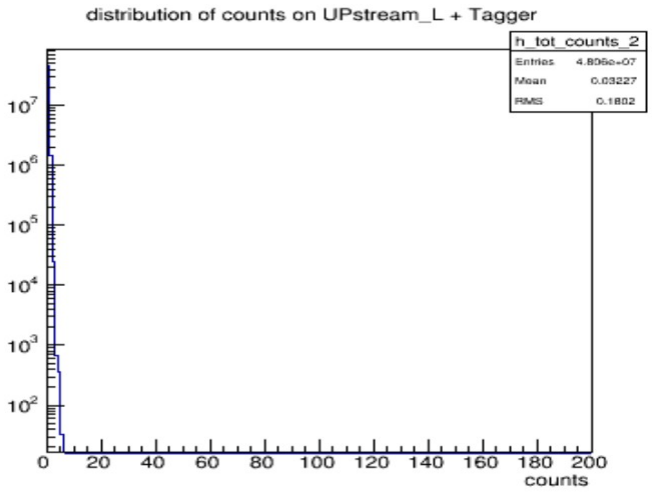

struckDaq_copy_3
counts
100
80
60
40
20
0
MCC told that trip was intentional, to test FST system
290.5585
290.5586
290.5587
290.5588
290.5589
t - t0 (sec)

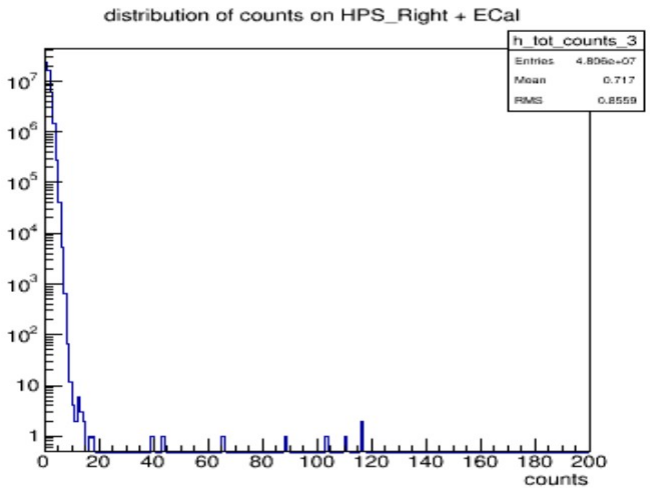
Collimator is at 4.973
w2r_20150429_234159.root

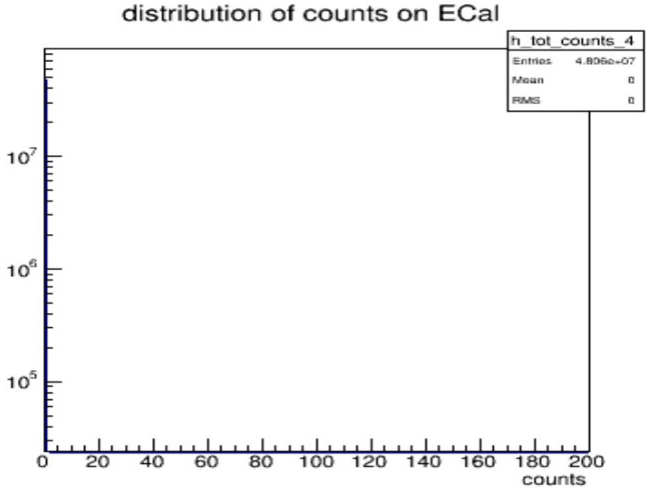
NO trip, but seems there was a beam motion



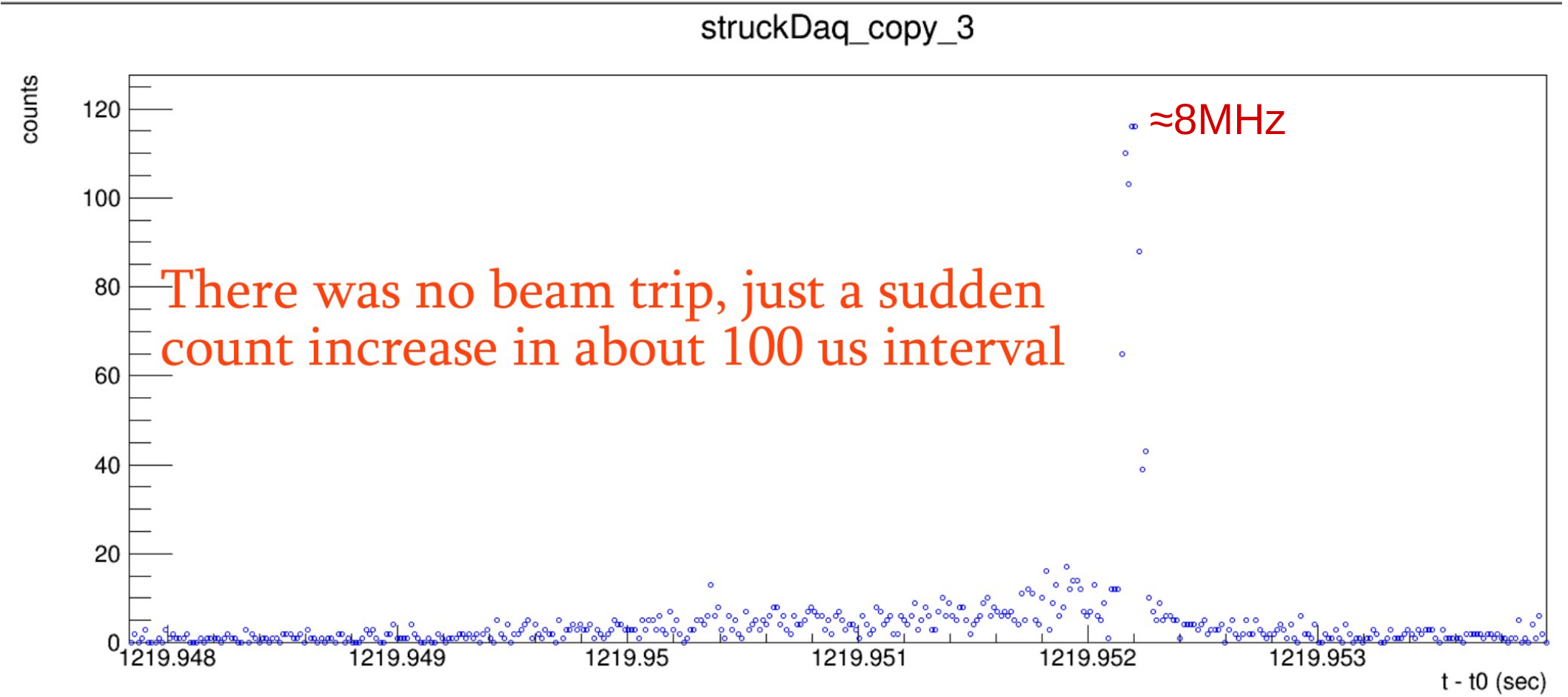








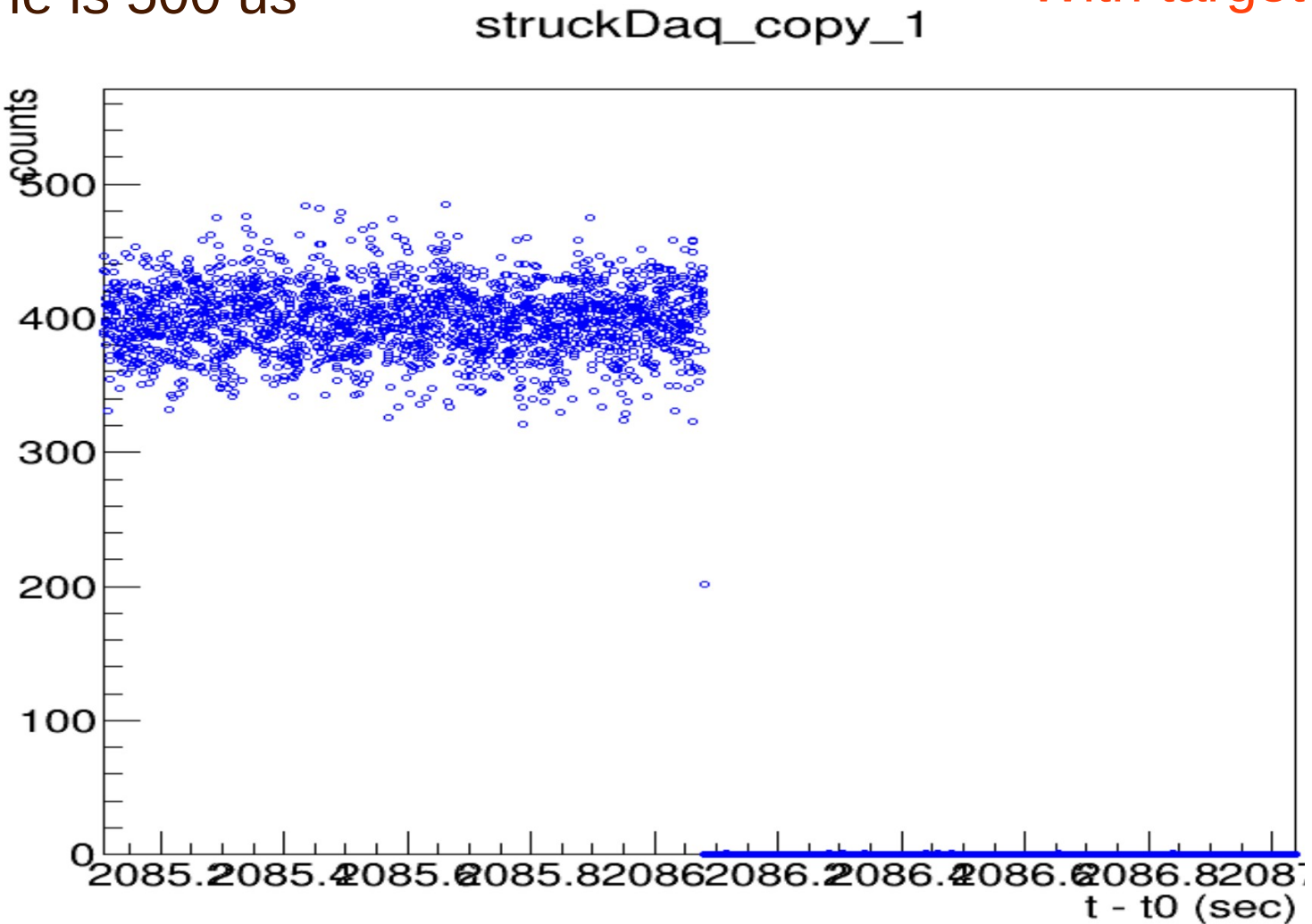
Collimator is at 4.973



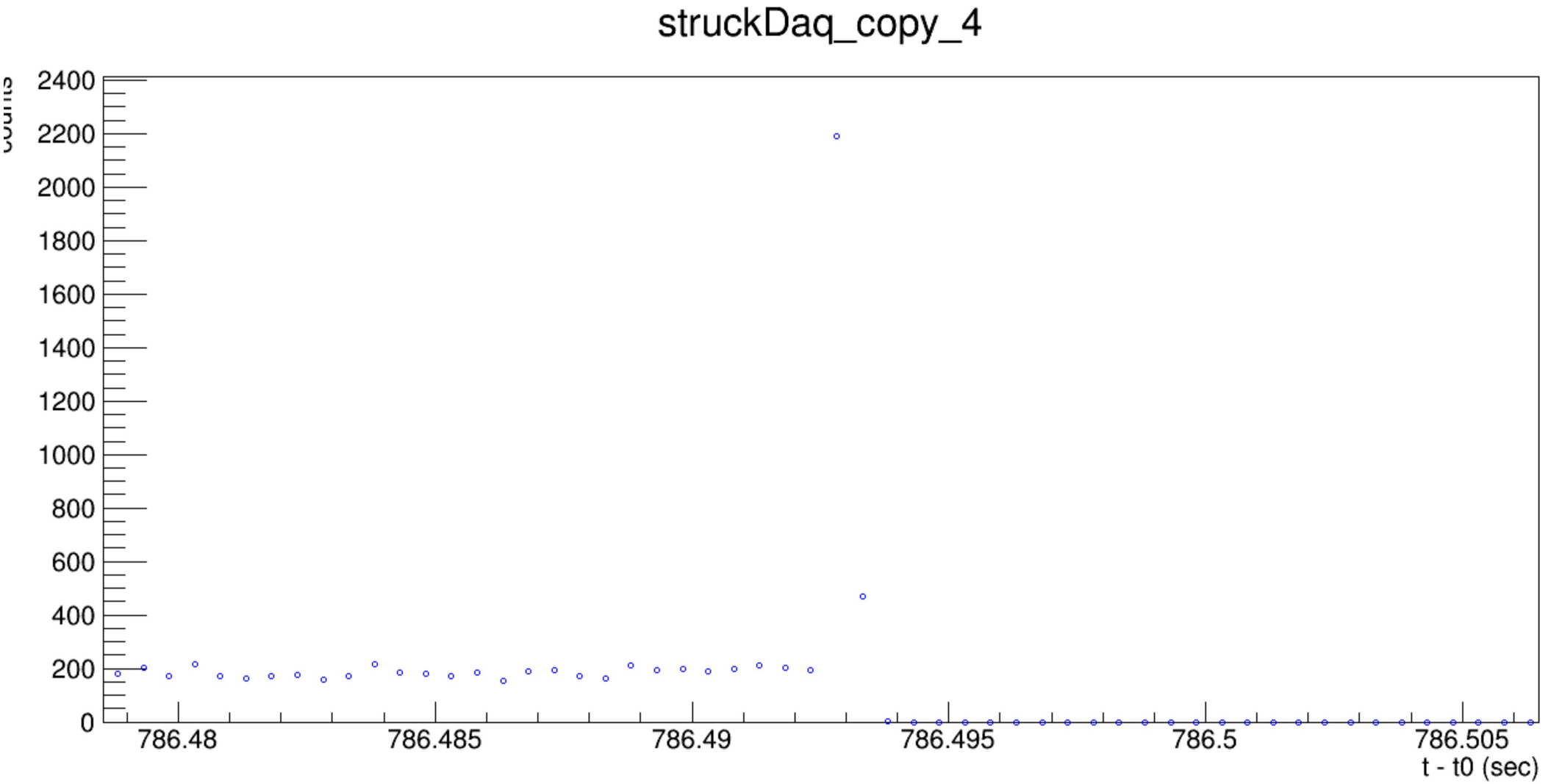
Trip from our Halo counters

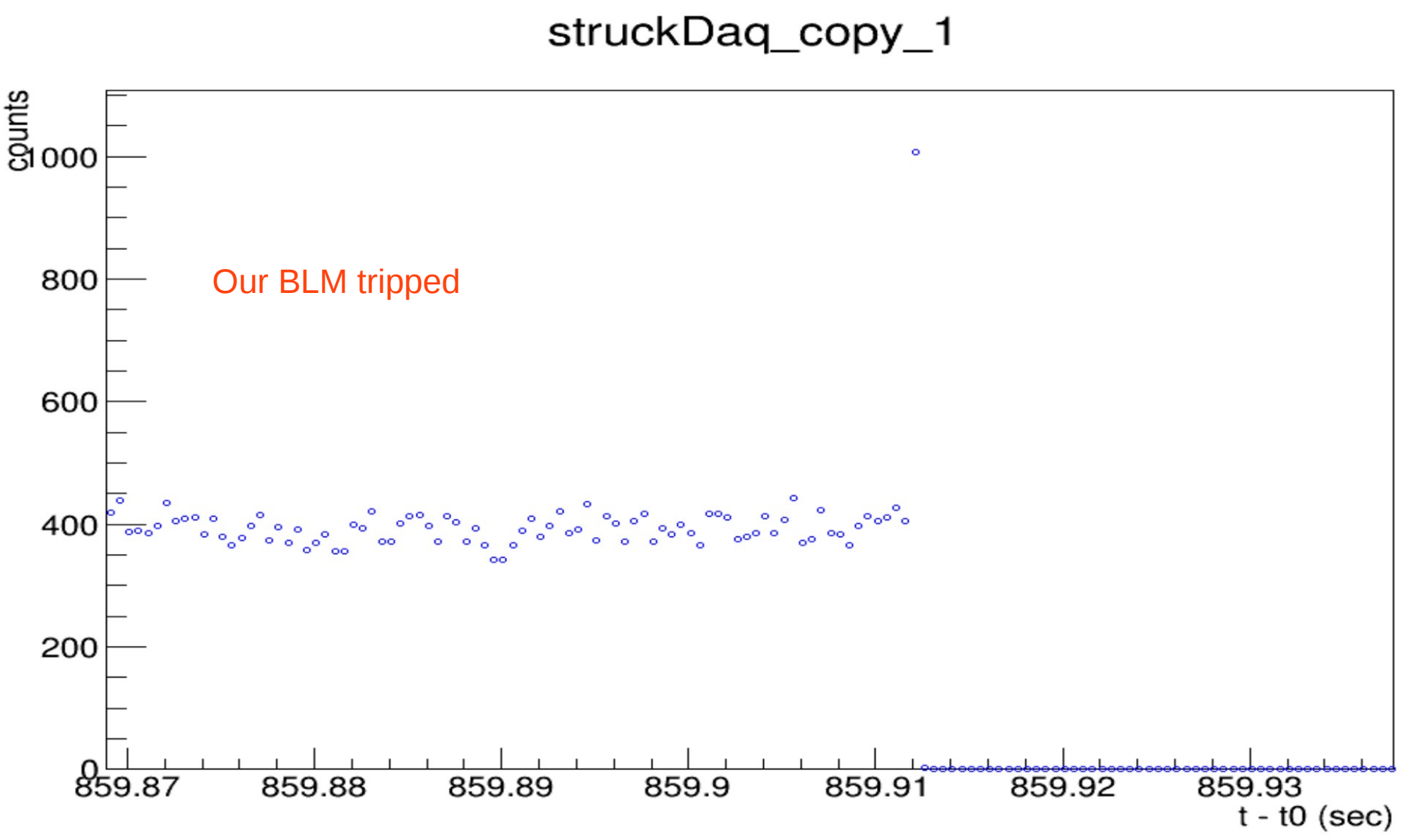
Dwell time is 500 us

With target

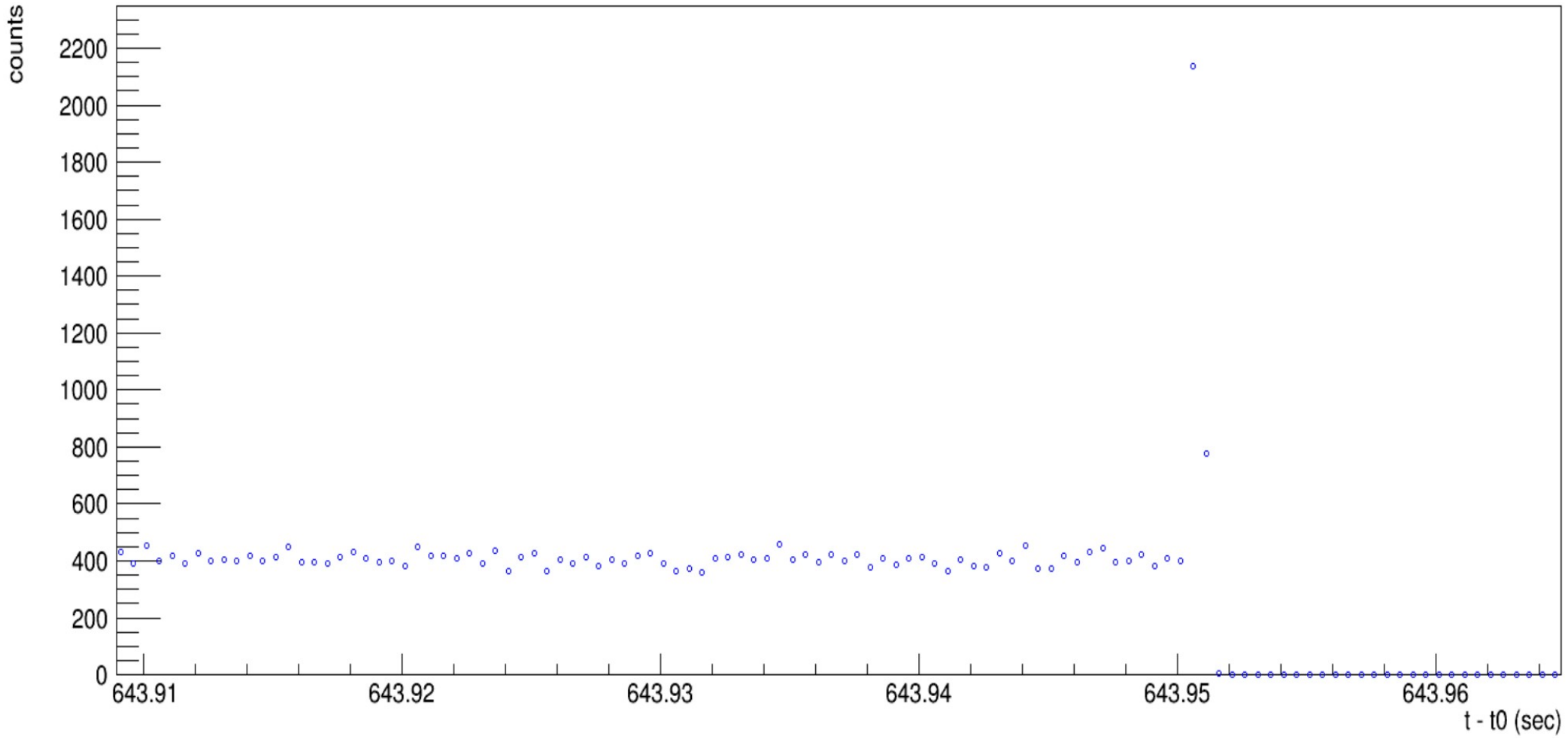


Trip from our Halo Counters

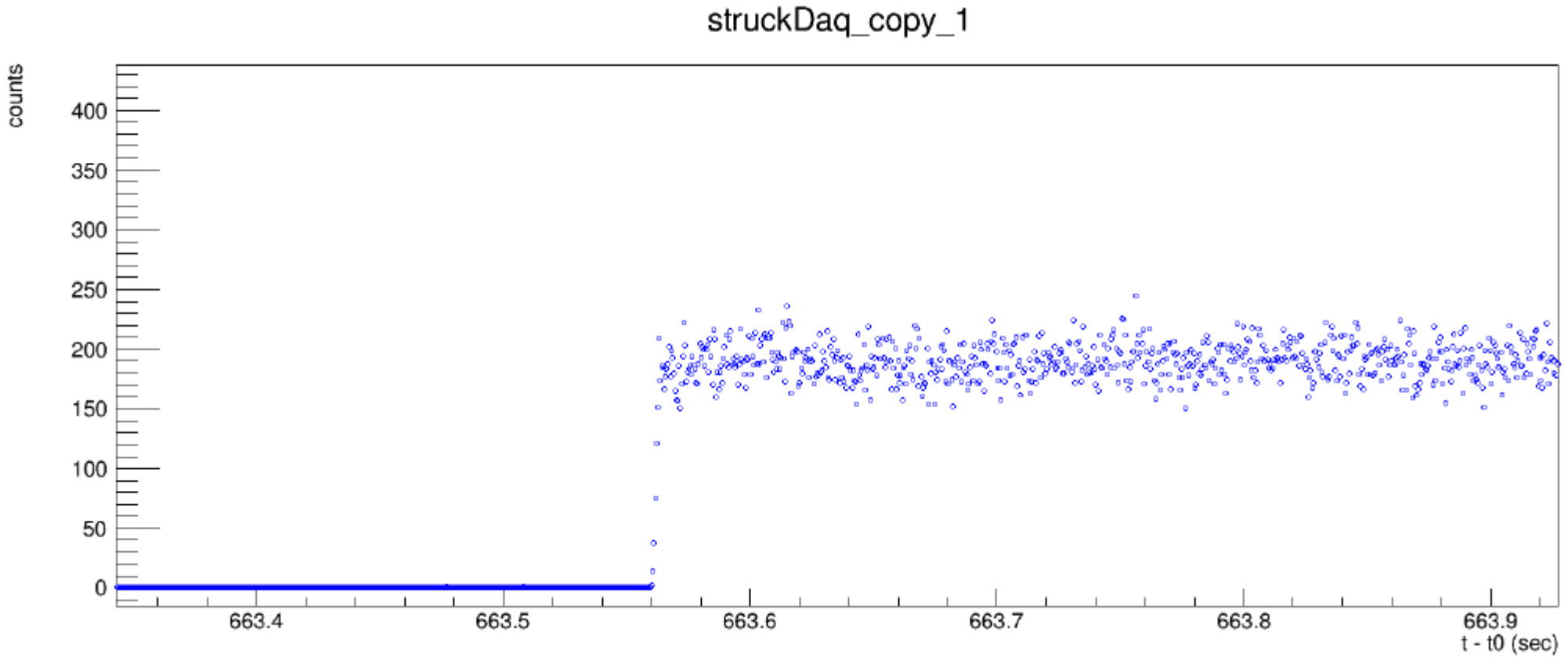



struckDaq_copy_1
counts
1000
800
600
400
200
0
Our BLM tripped
859.87
859.88
859.89
859.9
859.91
859.92
859.93
t - t0 (sec)

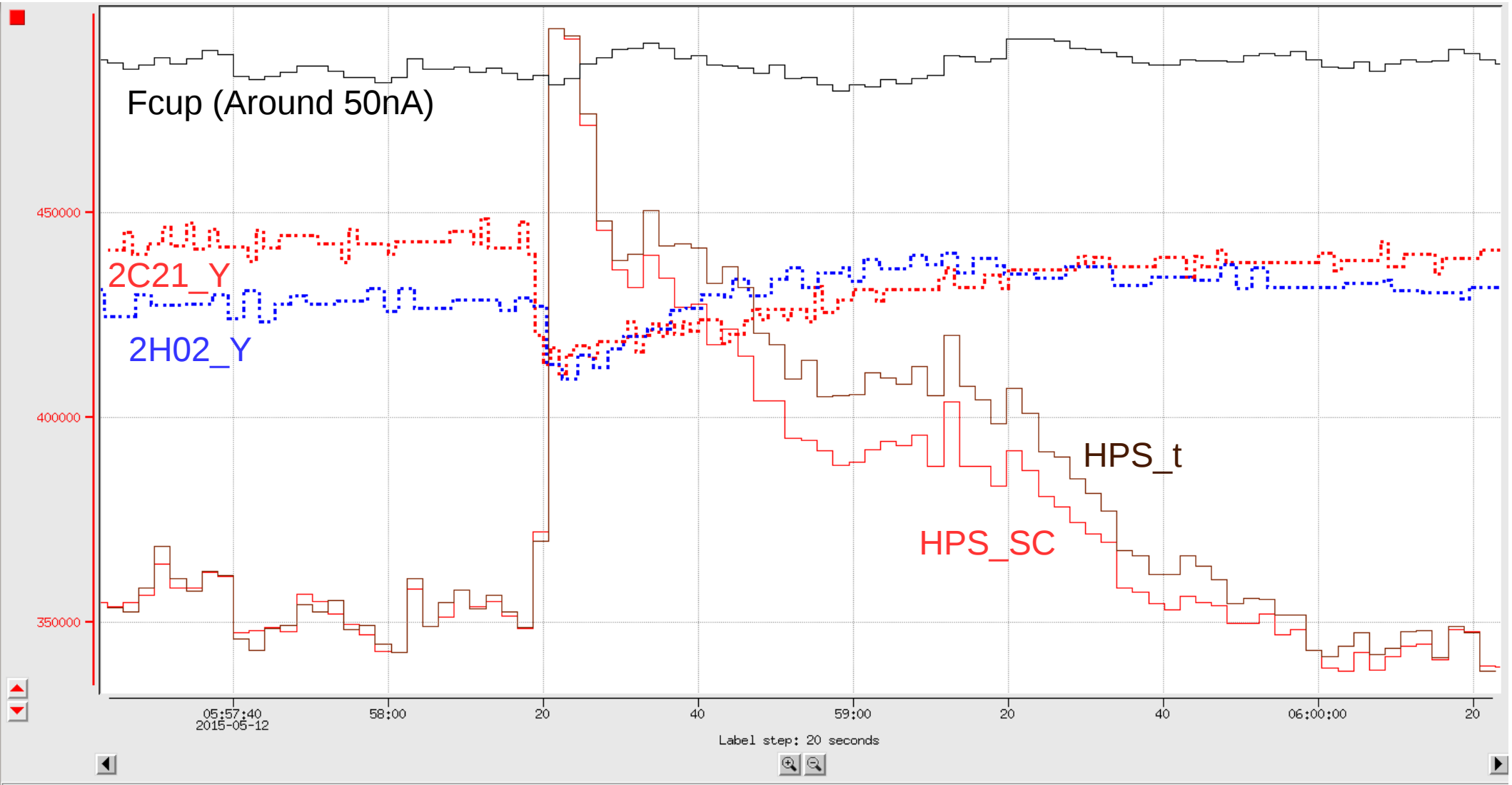
RF Tripped


struckDaq_copy_1
counts
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
643.91
643.92
643.93
643.94
643.95
643.96
t - t0 (sec)

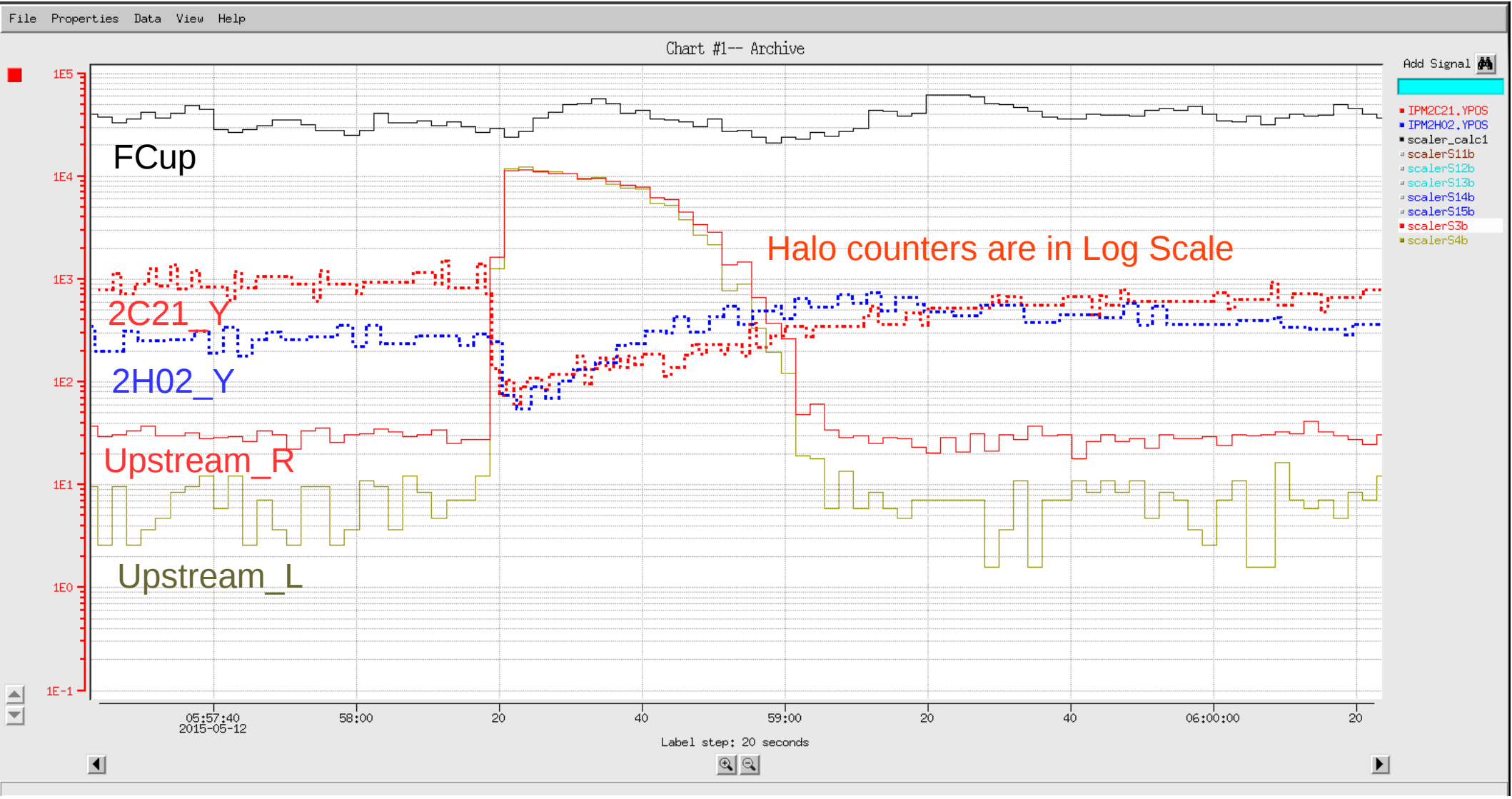
Recoveries especially with the 1.05 GeV beam always looked fine



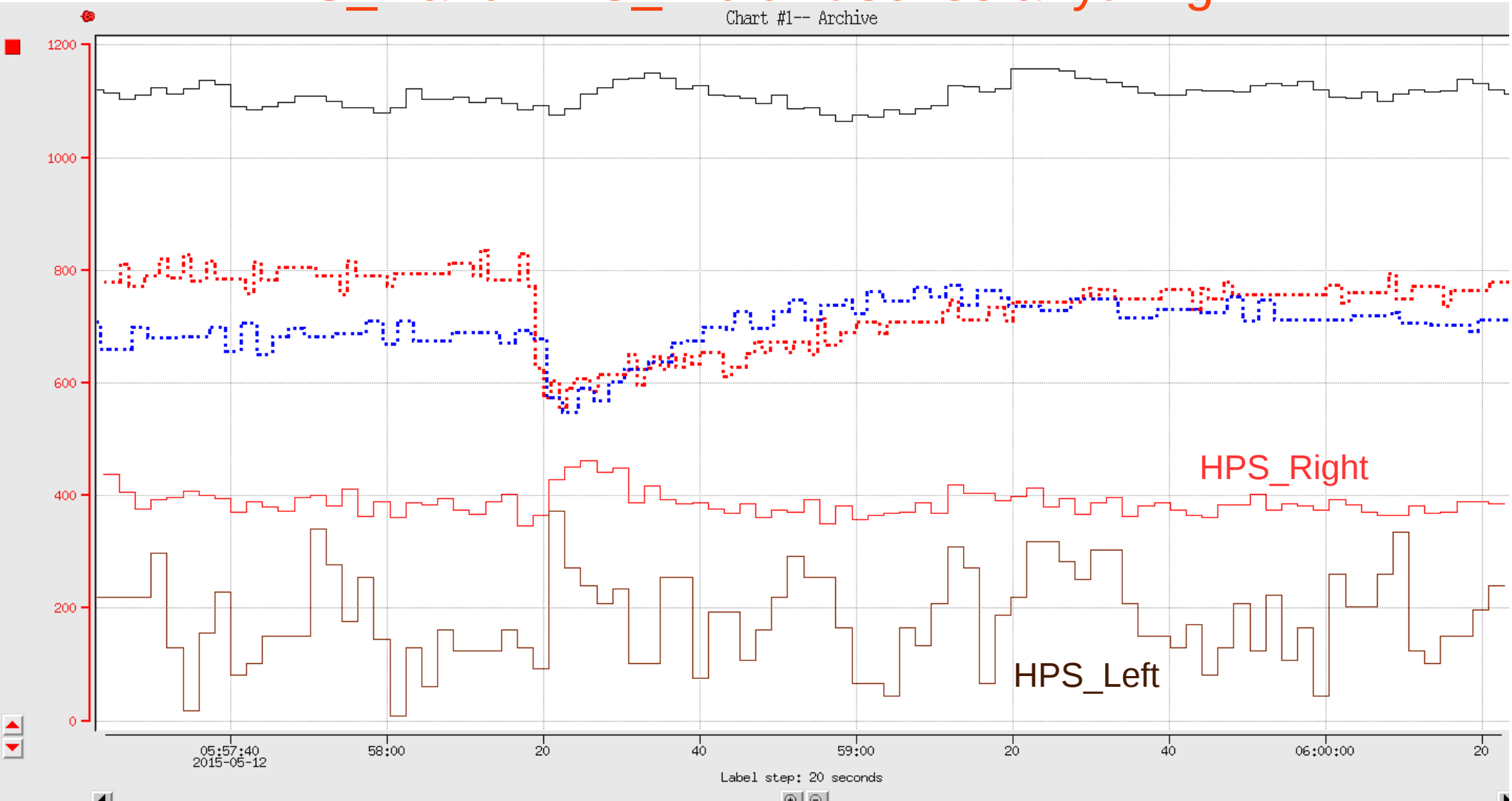
Maurik Mentioned in one of Wed. Meetings



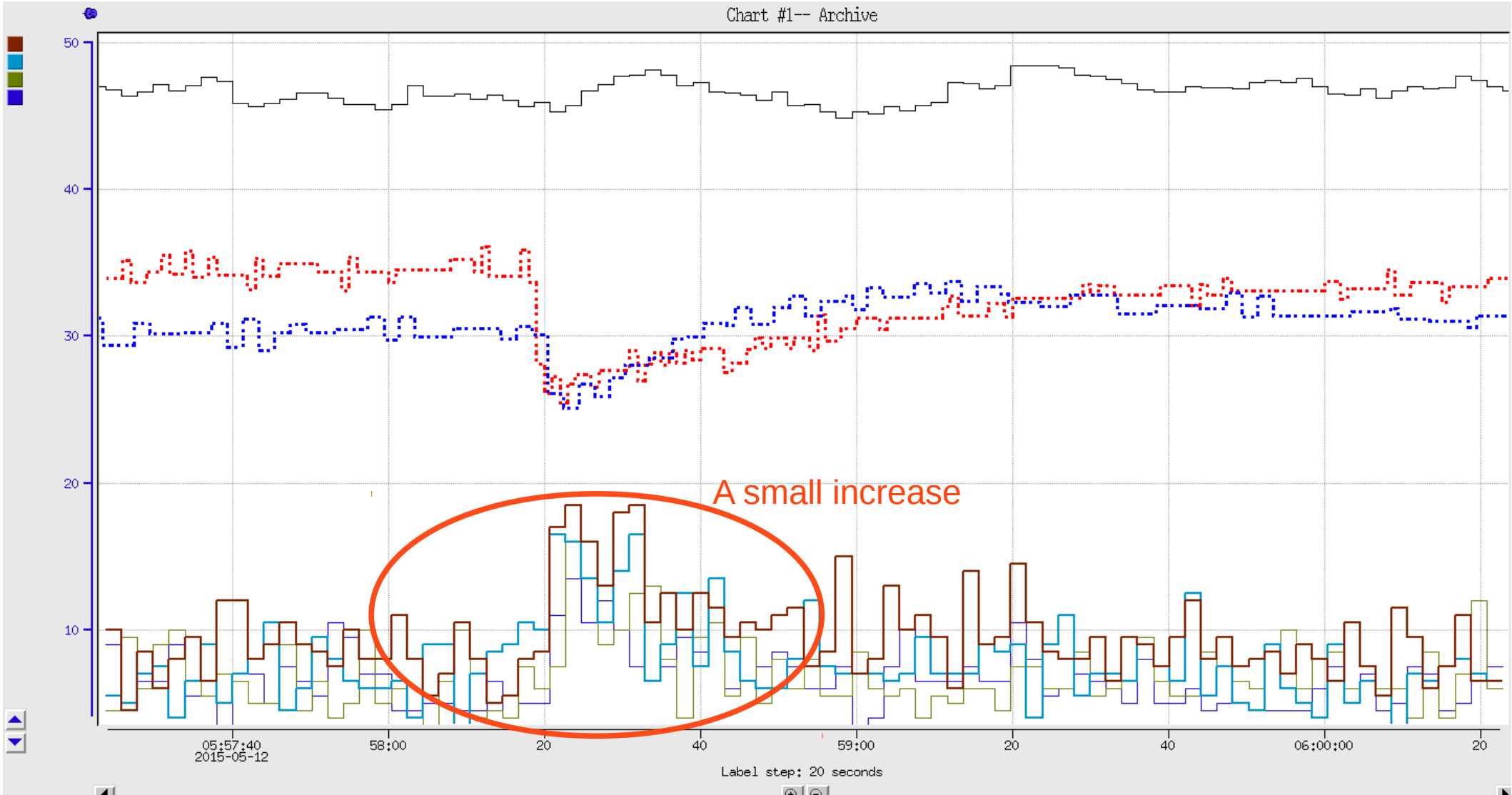
In the downstream part rate increase is more dramatic



HPS_L and HPS_R didn't sense anything

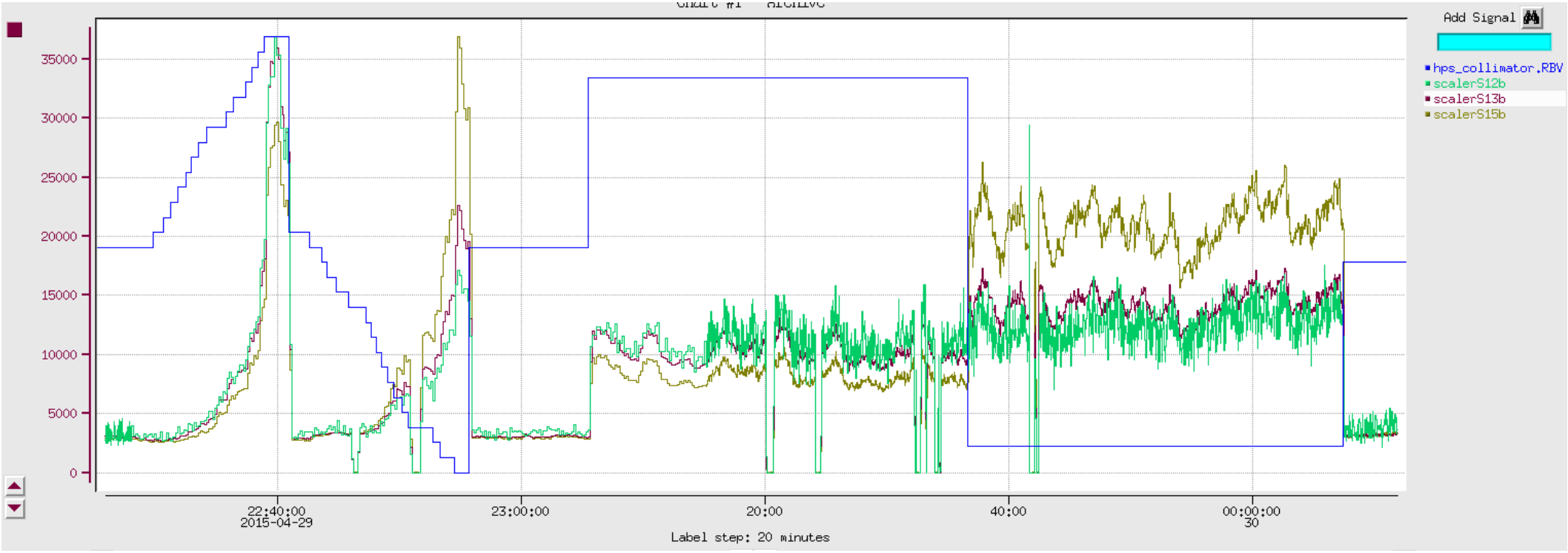


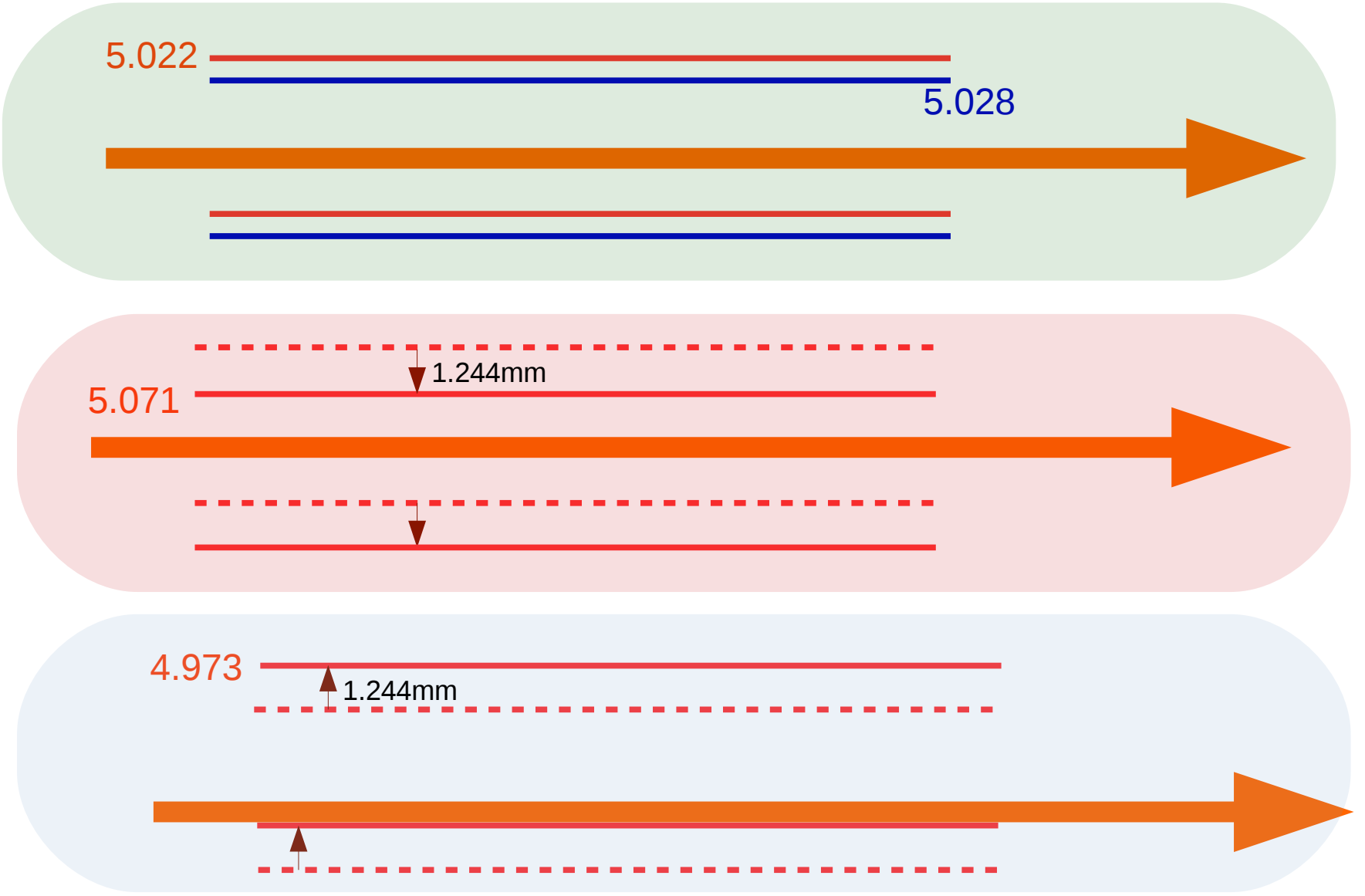
Neither downstream counters sense it



Backup

Proportion between counters is different depending on Collimator position.
Then the questions is what is the best counter that will tell where is the collimator center




5.022
5.028
1.244mm
5.071
4.973
1.244mm