September 11, 2007

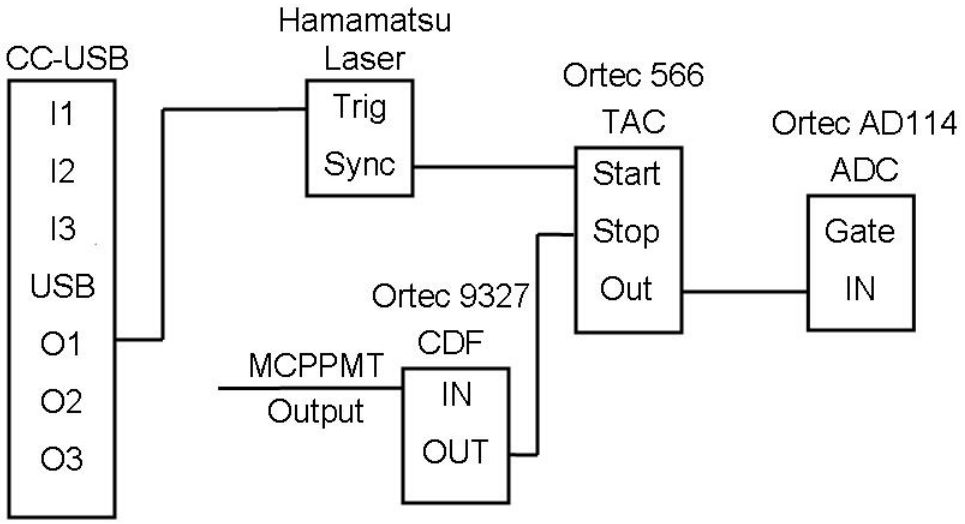
Best Results from the laser test stand.

MCP: Mark-0 HV: 1900V Laser: 635nm

CFD: Ortec 9327 Events: 5000

Threshold: -50mV

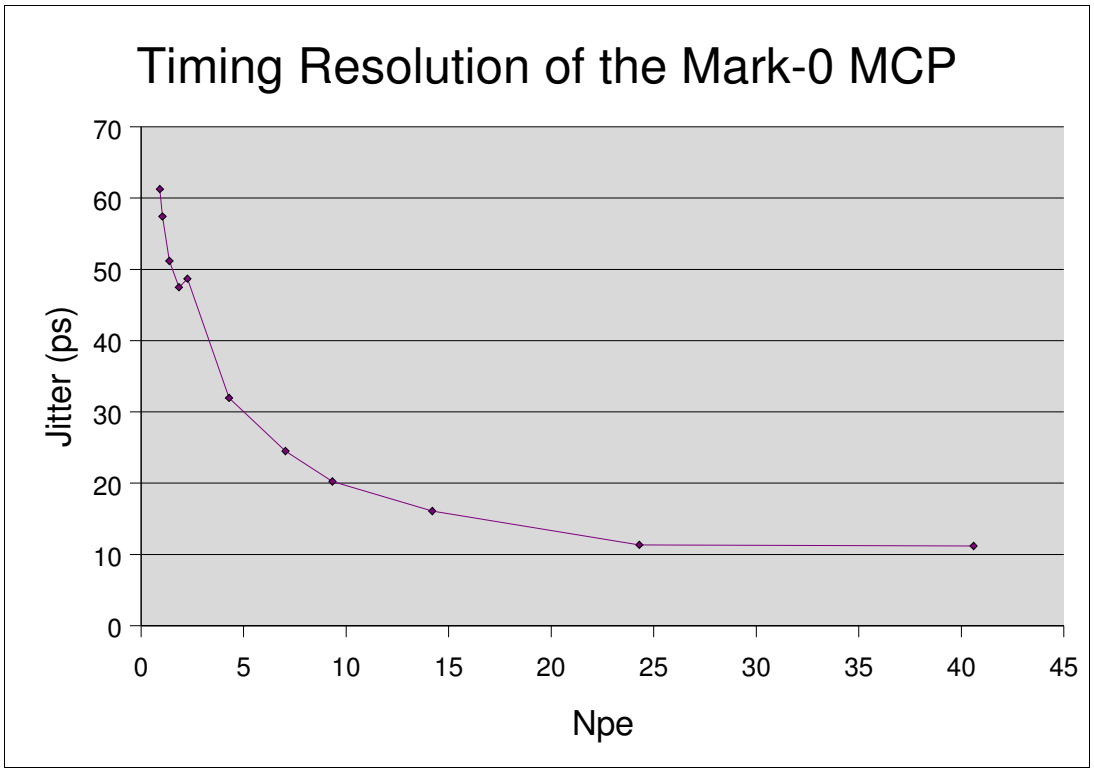
Walk: 5mV



Run #	ND Filter	Scope Picture	Trigger %	Total # of Events
709	3.5	NPE0000.jpg	5.5	90939
710	3.4	NPE0001.jpg	13.85	36103
711	3.2	NPE0002.jpg	59.12	8458
712	3.1	NPE0003.jpg	90.51	5524
713	3	NPE0004.jpg	98.46	5078
714	2.8	NPE0005.jpg	100	5000
715	2.6	NPE0006.jpg	100	5000
716	2.4	NPE0007.jpg	100	5000
717	2.2	NPE0008.jpg	100	5000
718	2	NPE0009.jpg	100	Over Range

Results:

Run #	Mean	Mean Error	Sigma	Sigma Error
709	6191	0.3	19.6	0.2
710	6910	0.3	18.4	0.2
711	6188	0.3	16.4	0.2
712	6182	0.2	15.2	0.2
713	6179	0.2	13.6	0.2
714	6167	0.2	10.2	0.1
715	6155	0.1	7.8	0.1
716	6152	0.1	6.5	0.1
717	6151	0.1	5.1	0.1



September 14, 2007

Initial gain measurements in the RABBIT test stand, getting the system to work.

MCP: Mark-0

Events: 2000

Results:

Run #	HV (kV)	Mean	Sigma	Npe	Gain
cam7	2.2	13543.3	867.17	64.81	7.69E+5
cam8	2.1	10204.9	432.64	70.9	3.67E+5
cam9	2	8158.8	201.38	62.87	1.81E+5
ca10	1.9	7212.77	82.26	62.58	7.43E+4
ca11	1.8	6749.14	29.77	39.49	3.38E+4

Calculations:

$N = (\text{mean} - \text{ped})$

$Npe = N^2 / (\text{sigma})^2$

$Gain = 7141 * (\text{sigma})^2 / N$

September 17, 2007

Gain measurement in the RABBIT test stand.

MCP: Mark-0

Events: 2000

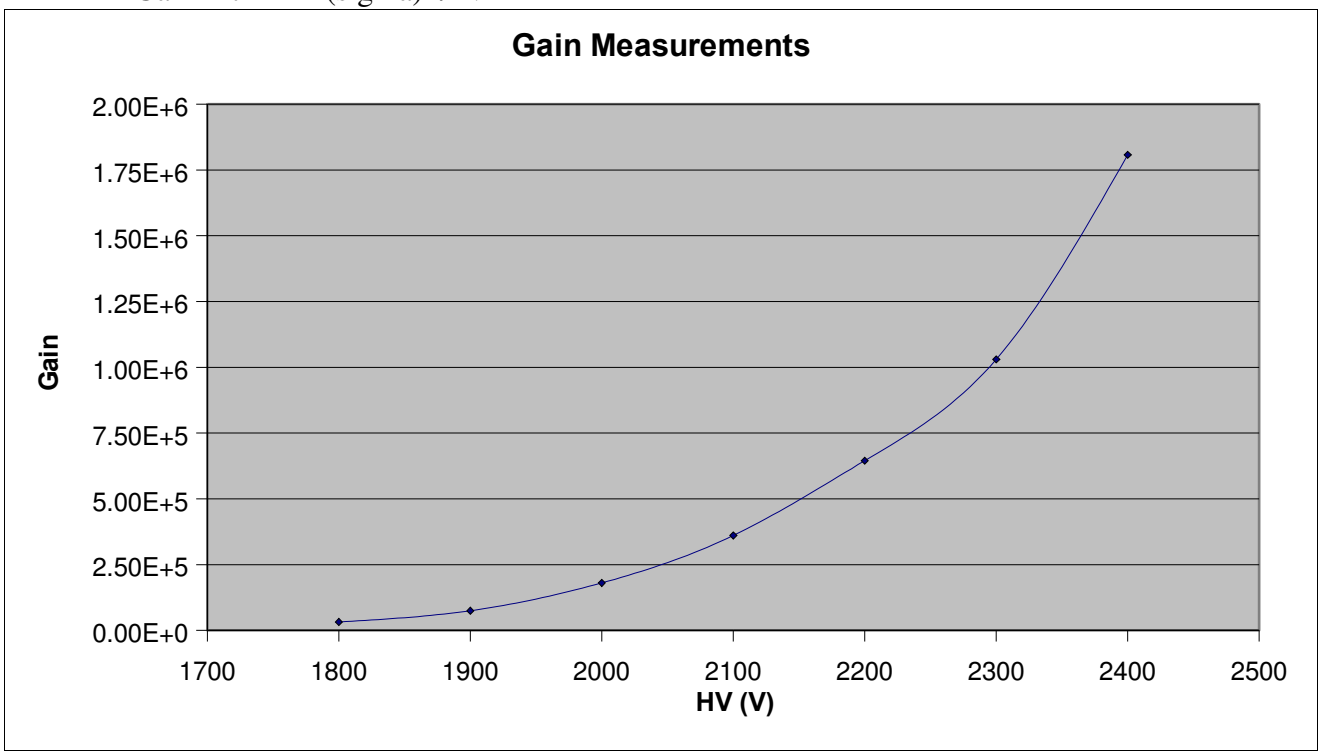
Raw Data	HV	Mean	Mean Error	Sigma	Sigma Error	Npe	Gain	Npe Error	Gain Error	% Gain Error
g001	1800	6805.94	0.79	32.74	0.57	54.49	3.17E+4	1.92	1103.25	3.48
g002	1900	7195.78	1.9	81.09	1.41	60.66	7.43E+4	2.14	2597.89	3.49
g003	2000	8099.96	4.62	196.74	3.54	60.93	1.80E+5	2.22	6493.12	3.61
g004	2100	9836.81	9.63	406.55	7.9	64.8	3.61E+5	2.55	14051.79	3.9
g005	2200	12396.3	17.43	725.68	13.02	64.59	6.45E+5	2.35	23215.4	3.6
g006	2300	12562.4	22.16	930.16	16.82	41.58	1.03E+6	1.53	37445.92	3.64
g007	2400	16156.2	38.31	1558.32	29.01	37.89	1.81E+6	1.44	67700.18	3.74
g008	Pedestal	6564.24	0.3	11.53	0.22					

Calculations:

N = (mean - ped)

Npe = N^2 / $(\text{sigma})^2$

Gain = 7141 * $(\text{sigma})^2$ / N



September 18, 2007

Comparison of 9307 and 9327.

MCP: Mark-0

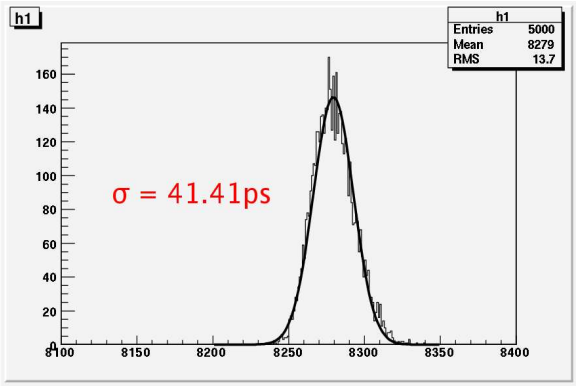
HV: 1900V

Threshold: -50mV

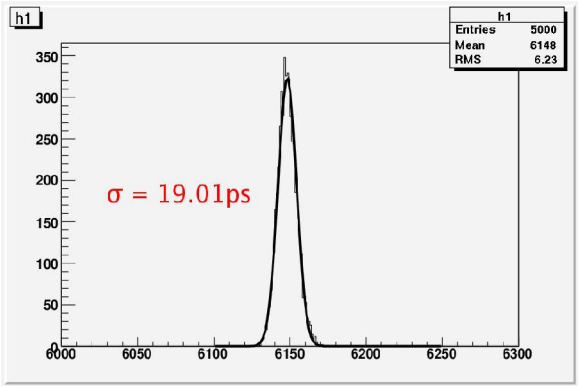
Walk: 5mV

Slew: -11mV

9307 & 9306:

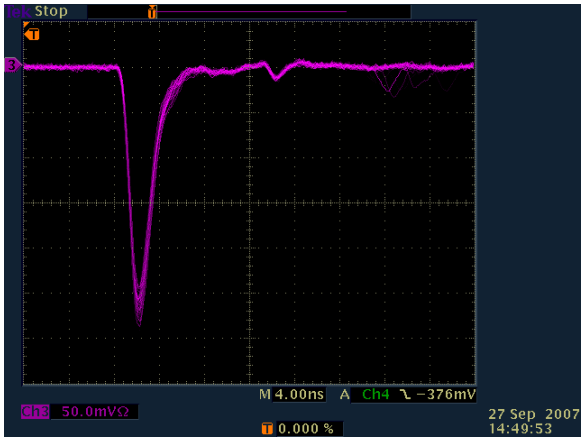


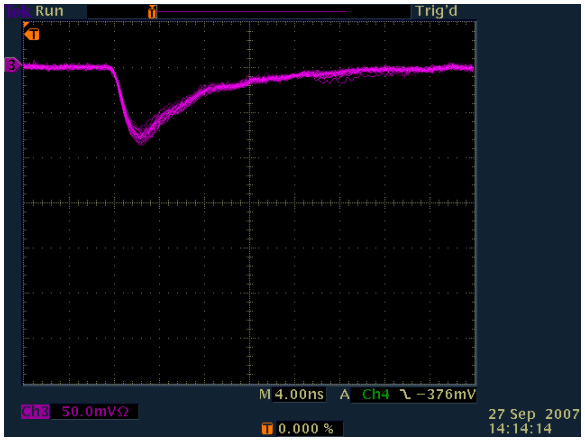
9327:



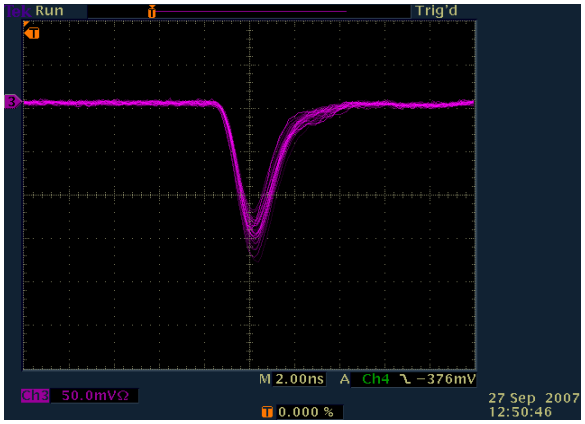
September 27, 2007

Comparison of 25um tube to 25um tube w/ Equal time anode.

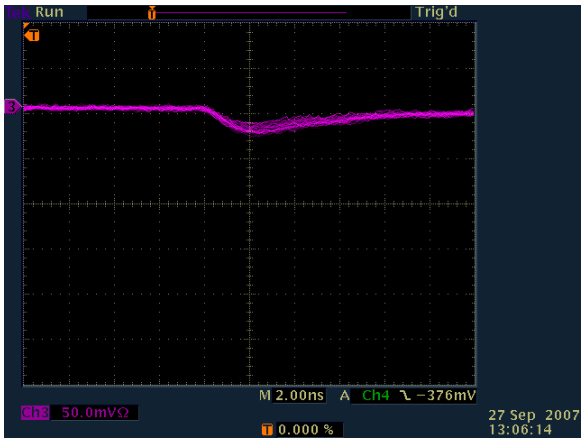


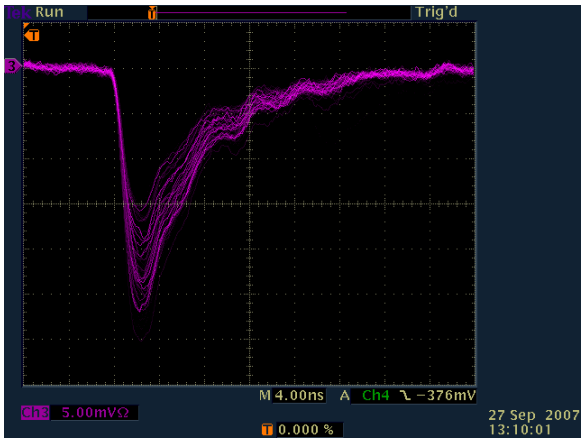


MCP: Commercial HV: 2.3kV Filter: 1.4



MCP: Commercial HV:2.3kV Filter: 2.0





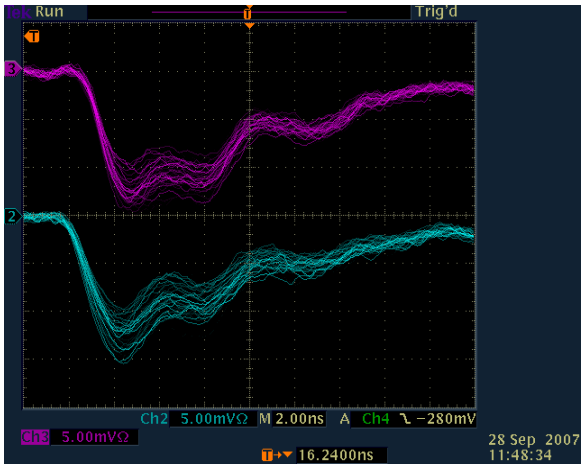
MCP: NT25um HV: 2.3kV Filer: 2.0

September 28, 2007

Comparison of two pads on a 25um tube w/ the equal time anode.

MCP: NT25um

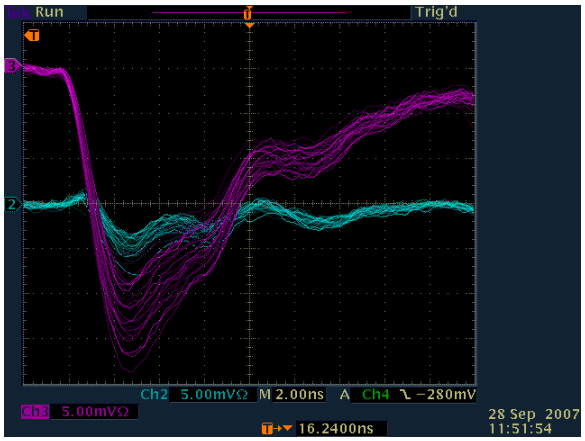
The stager was moved in the z axis while the raw output from two pads were compared on a 300MHz scope.

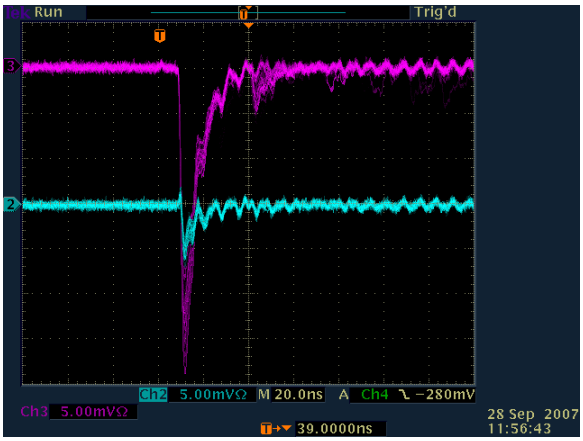


Laser at position: 25.8mm (center of two pads)

Ch 3: Top pad

Ch 2: Bottom pad

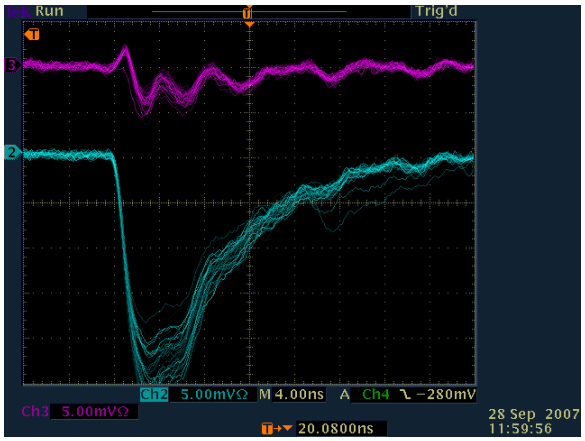


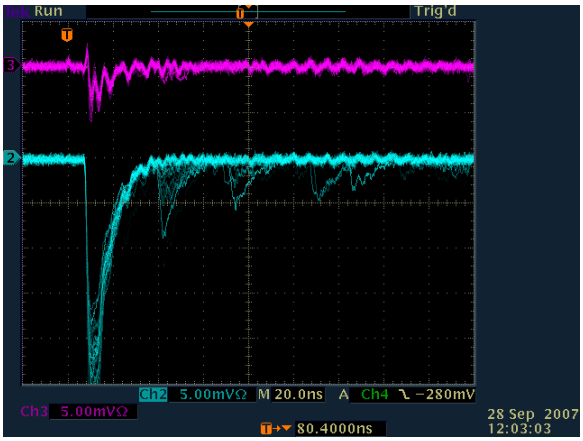


Laser at position: 20.8mm

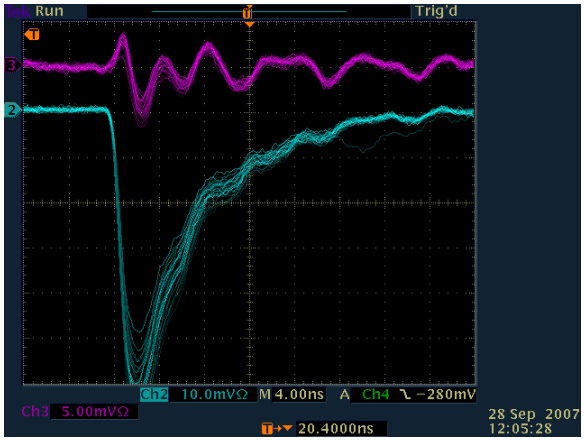
Ch 3: Top pad

Ch 2: Bottom pad





Laser at position: 30.8mm
Ch 3: Top pad
Ch 2: Bottom pad



Laser at position: 40.8
Ch 3: Top pad
Ch 2: Bottom pad

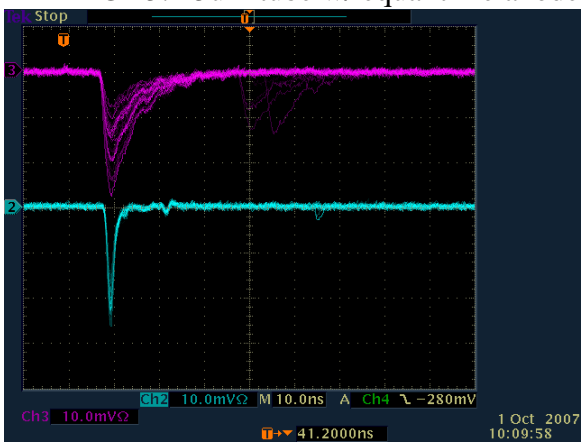
October 1, 2007

Equal time anode initial timing measurements.

Scope1:

Ch 2: commercial HV: 1.85kV Current: 0.133mA

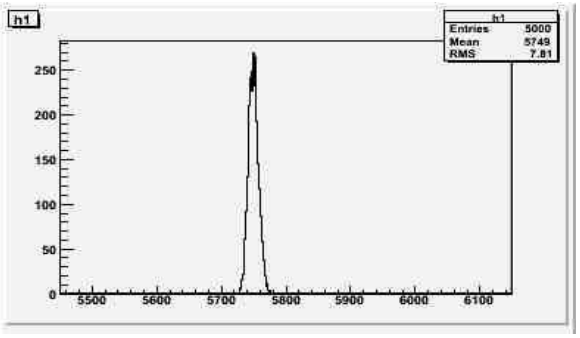
Ch 3: 25um tube w/ equal time anode HV: 2.49kV Current: .491mA

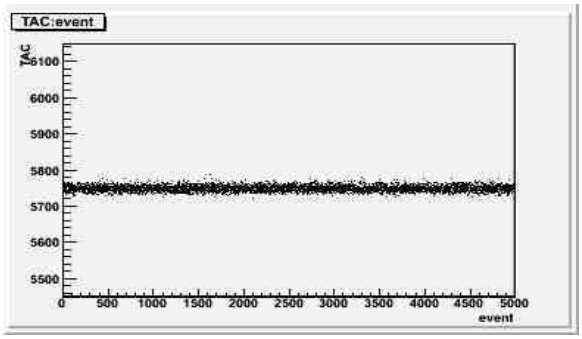


Run #: 805

MCP: Commercial tube CFD Thresh: -20mV CFD Walk: 5.0mV

HV: 1.85kV ND Filter: 2.2

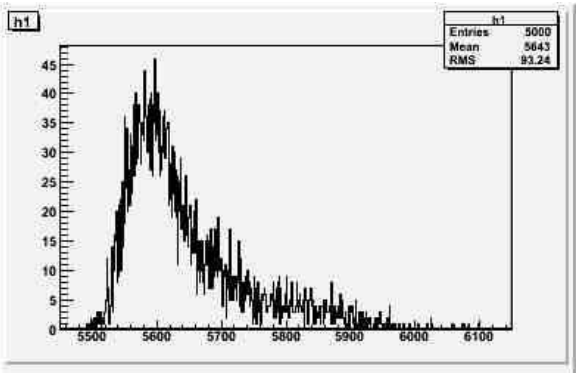


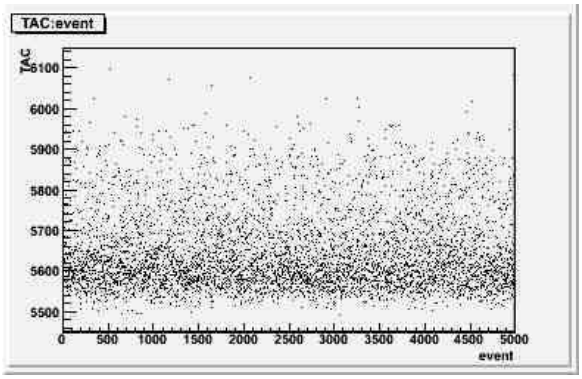


Run #: 806

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: 5.0mV

HV: 2.49kV ND Filter: 2.2

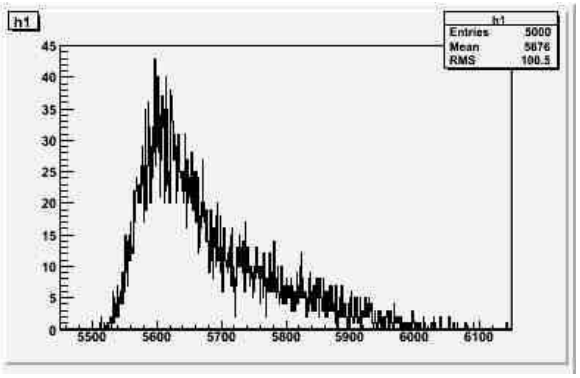


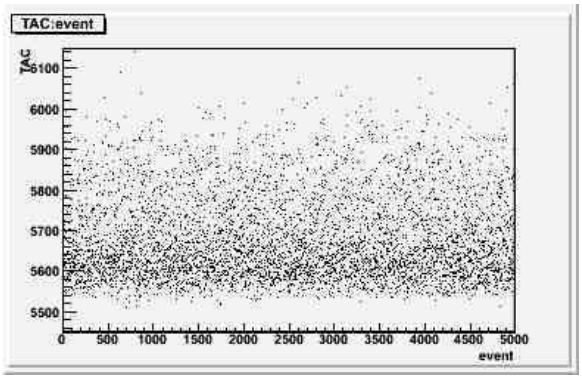


Run #: 807

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: 5.0mV

HV: 2.3kV ND Filter: 2.2

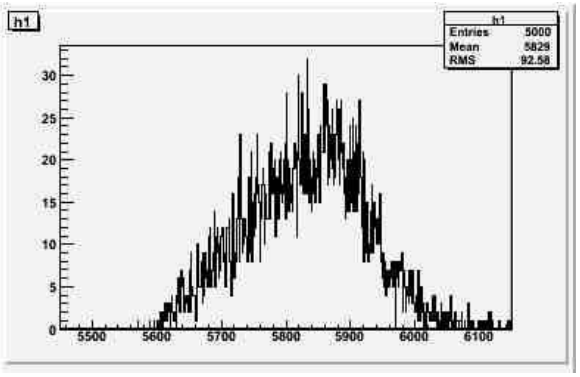


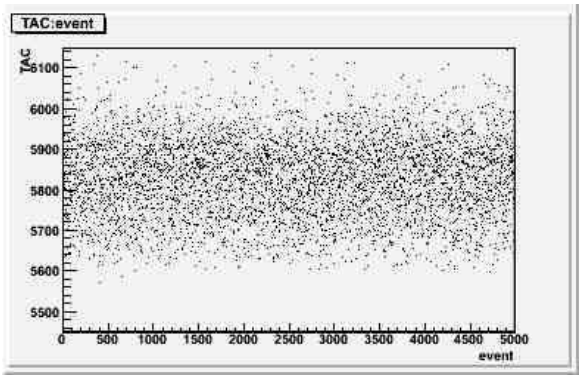


Run #: 808

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: 5.0mV

HV: 2.0kV ND Filter: 2.2

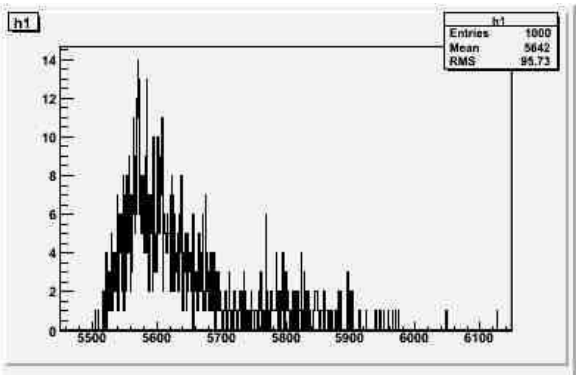


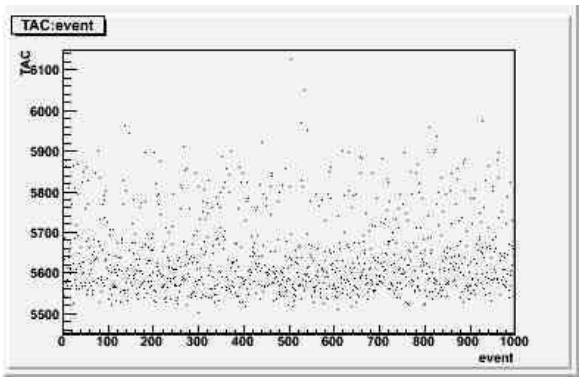


Run #: 809

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: 5.0mV

HV: 2.5kV ND Filter: 2.2

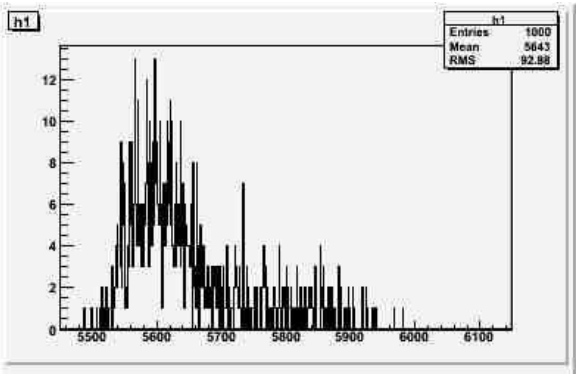


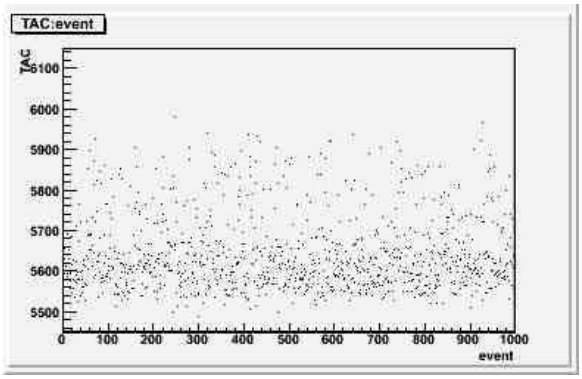


Run #: 810

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: 6.9mV

HV: 2.5kV ND Filter: 2.2

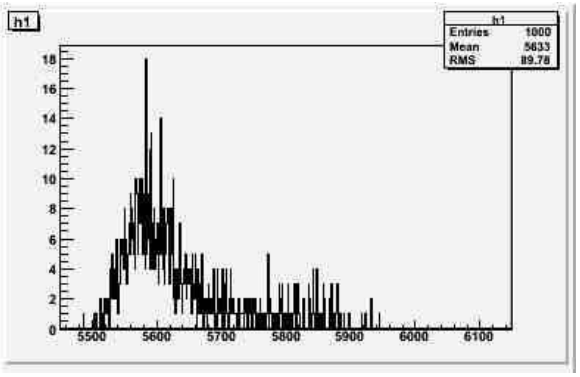


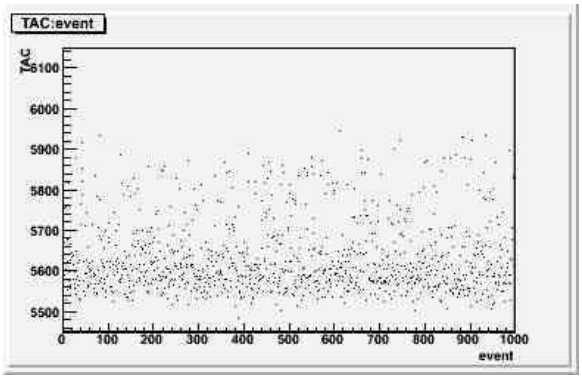


Run #: 811

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: 2.0mV

HV: 2.5kV ND Filter: 2.2

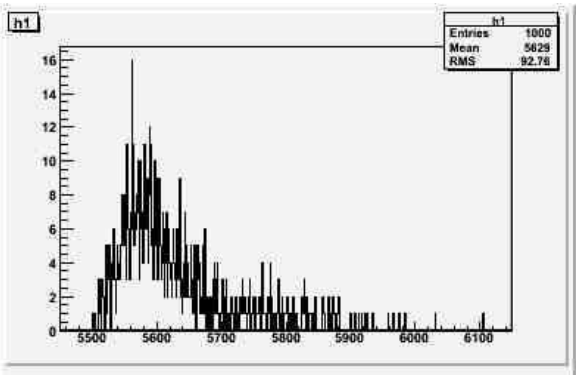


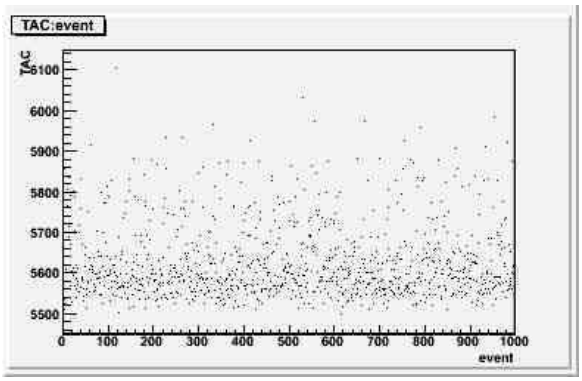


Run #: 812

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: 0.0mV

HV: 2.5kV ND Filter: 2.2

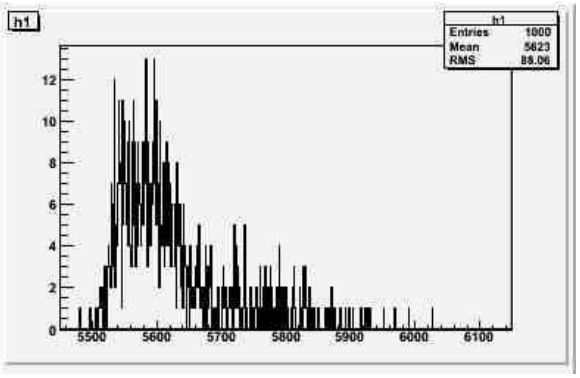


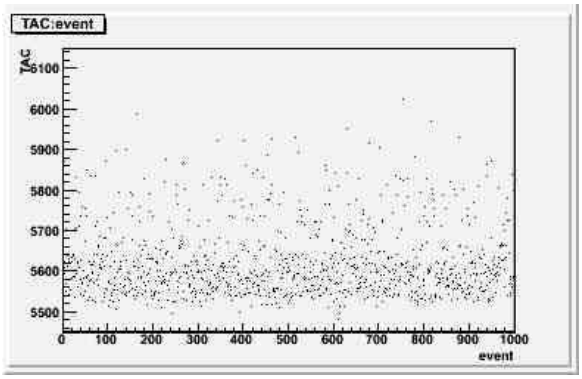


Run #: 813

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: -2.0mV

HV: 2.5kV ND Filter: 2.2

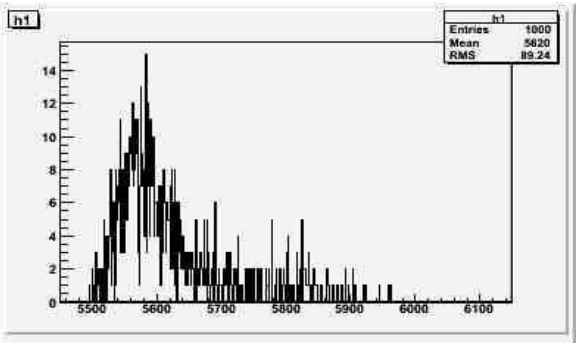


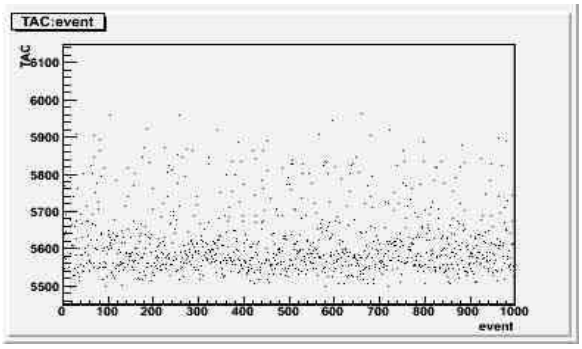


Run #: 814

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: -5.0mV

HV: 2.5kV ND Filter: 2.2

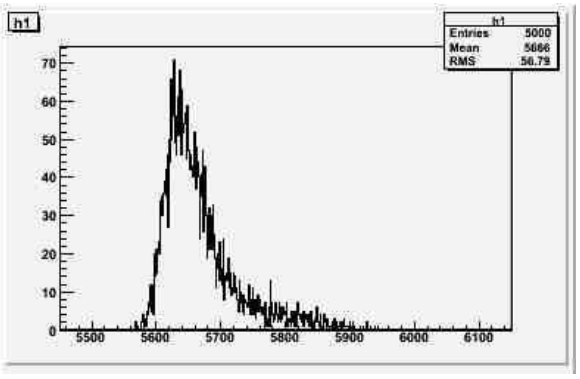


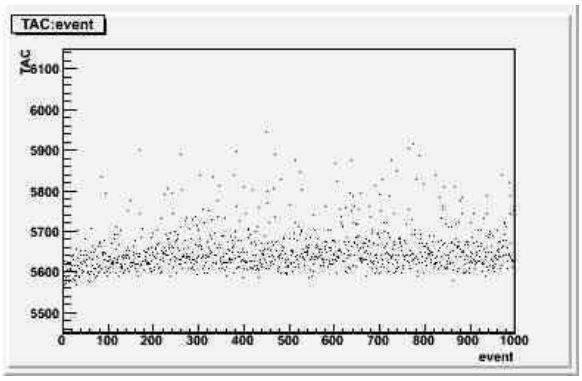


Run #: 815

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: 5mV

HV: 2.5kV ND Filter: 1.4

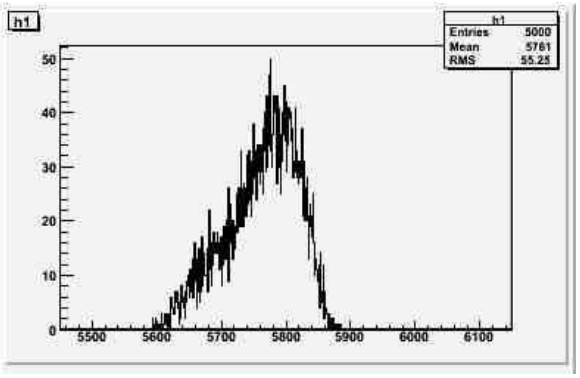


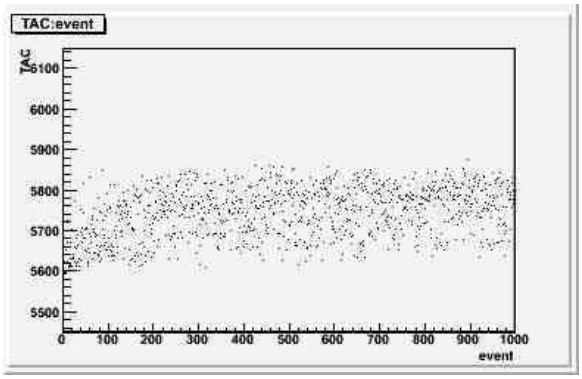


Run #: 816

MCP: New 25um tube CFD Thresh: -20mV CFD Walk: 5mV

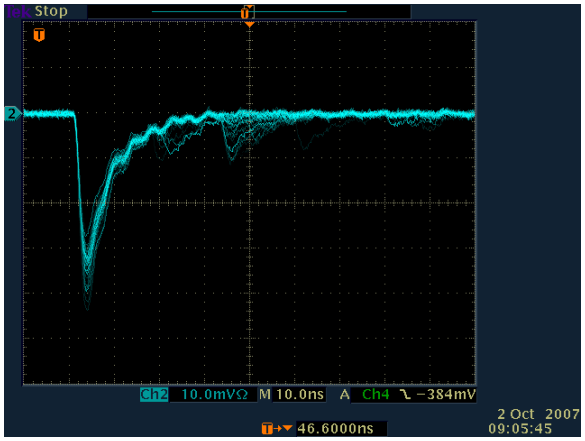
HV: 2.5kV ND Filter: 1.0

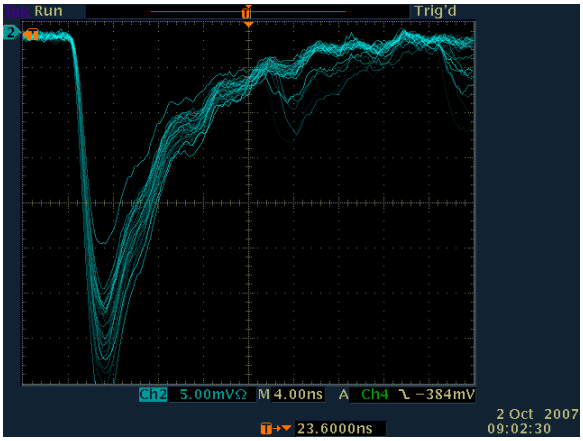




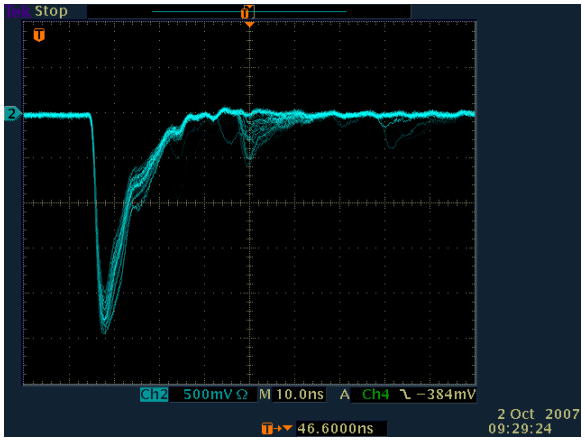
October 2, 2007

Equal time anode initial timing measurements.





MCP: NT25um HV: 2.3kV Filter: 0.7

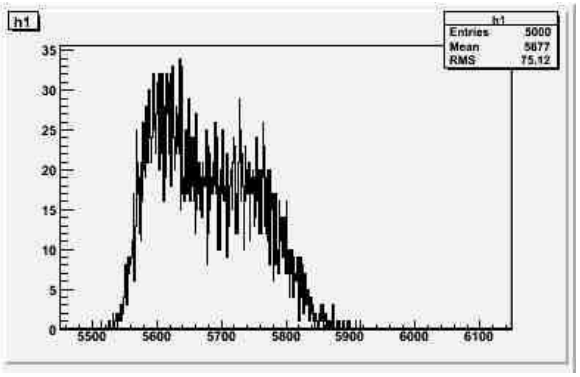


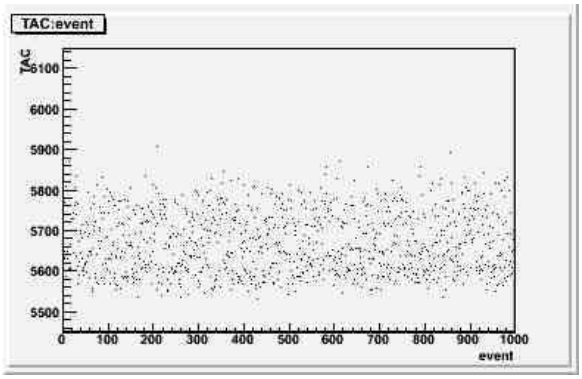
MCP: NT25um w/ 9306 amp HV: 2.3kV Filter: 0.7

Run #: 817

MCP: New 25um tube CFD Thresh: -10mV CFD Walk: 5mV

HV: 2.3kV ND Filter: 0.7

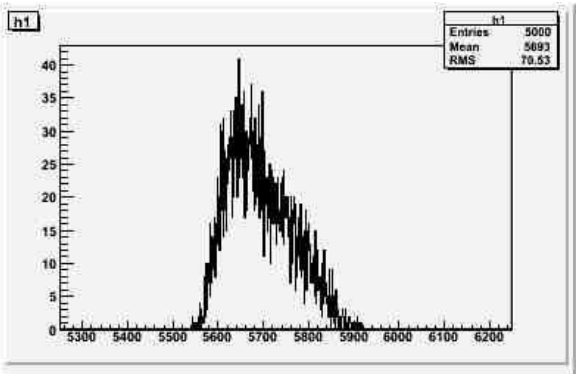


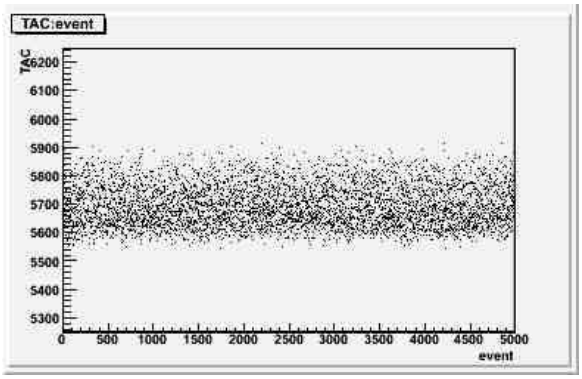


Run #: 825

MCP: New 25um tube CFD Thresh: -25mV CFD Walk: 5mV

HV: 2.3kV ND Filter: 0.7

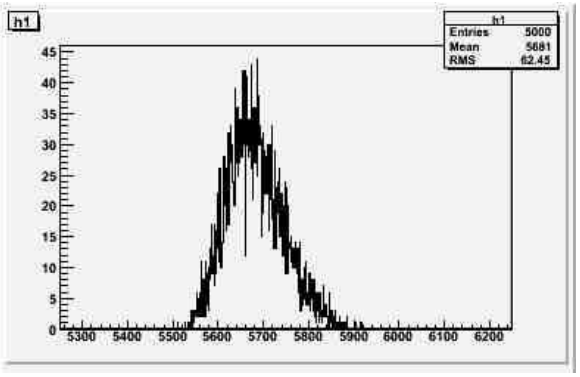


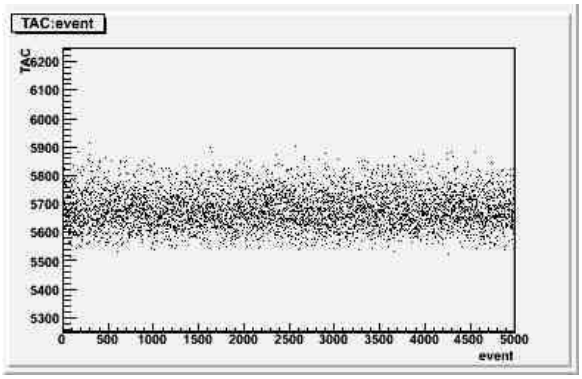


Run #: 818

MCP: New 25um tube CFD Thresh: -50mV CFD Walk: 5mV

HV: 2.3kV ND Filter: 0.7

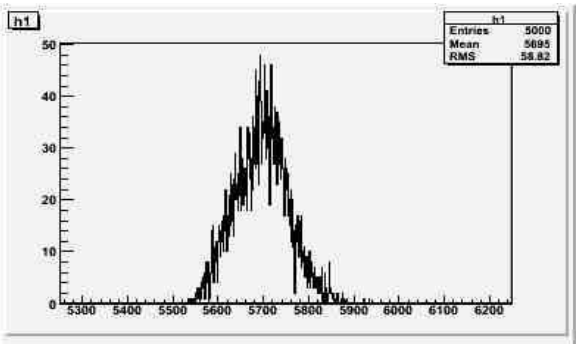


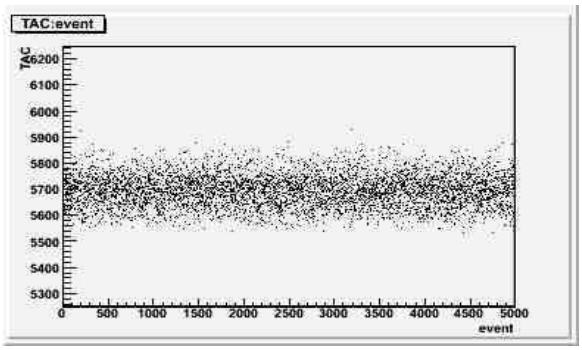


Run #: 819

MCP: New 25um tube CFD Thresh: -100mV CFD Walk: 5mV

HV: 2.3kV ND Filter: 0.7

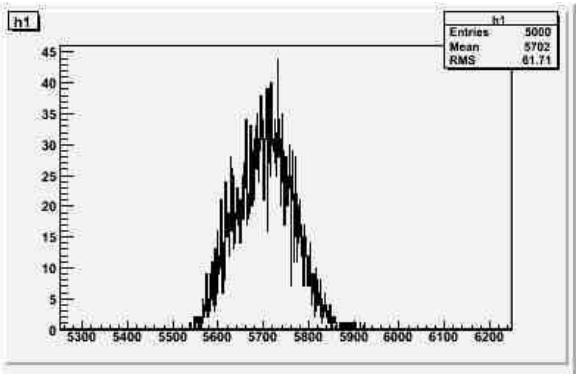


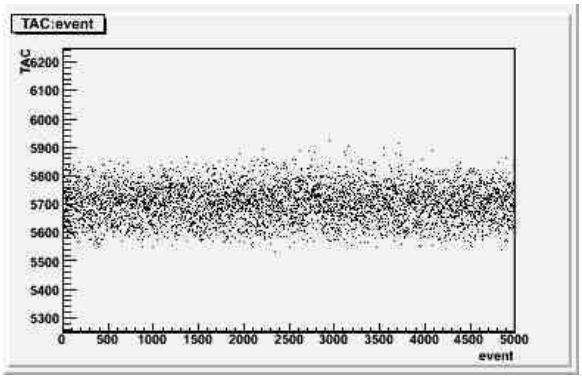


Run #: 822

MCP: New 25um tube CFD Thresh: -150mV CFD Walk: 5mV

HV: 2.3kV ND Filter: 0.7

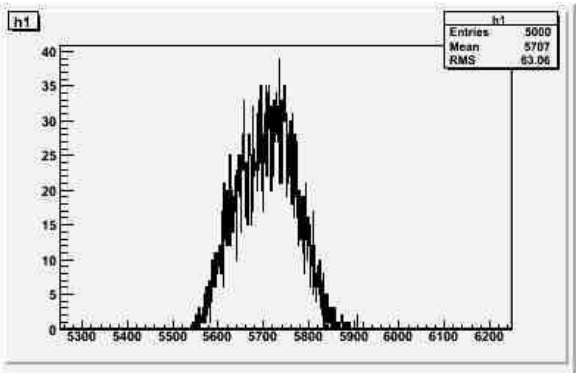


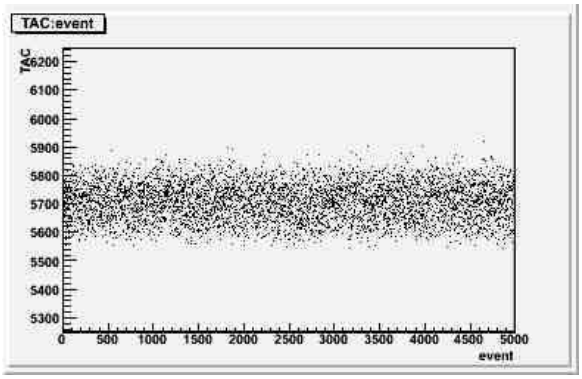


Run #: 823

MCP: New 25um tube CFD Thresh: -200mV CFD Walk: 5mV

HV: 2.3kV ND Filter: 0.7

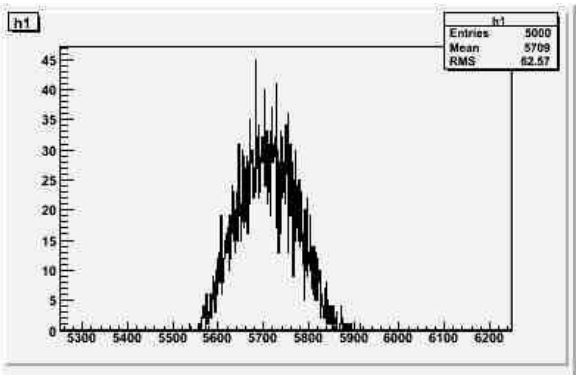


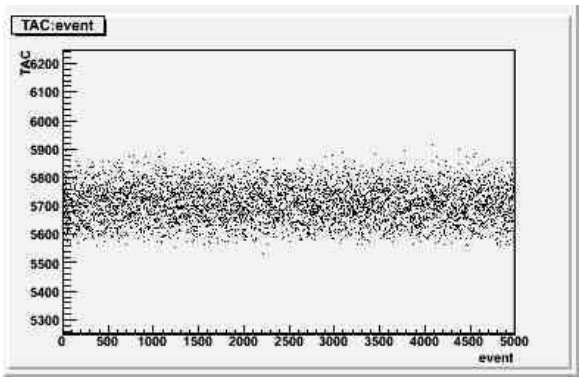


Run #: 824

MCP: New 25um tube CFD Thresh: -250mV CFD Walk: 5mV

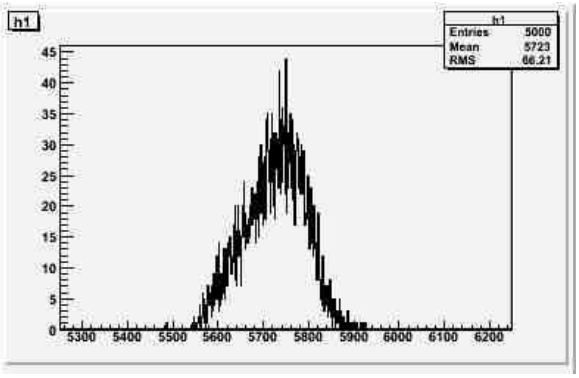
HV: 2.3kV ND Filter: 0.7

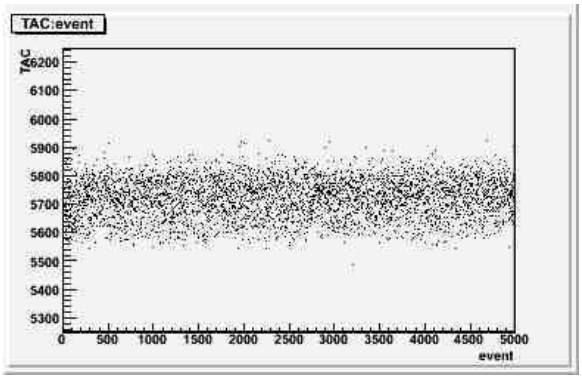




Run #: 821

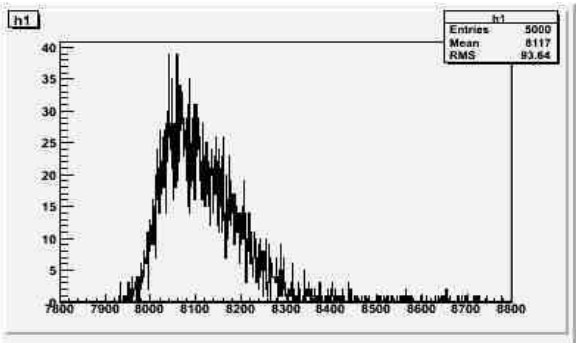
MCP: New 25um tube CFD Thresh: -500mV CFD Walk: 5mV HV: 2.3kV ND Filter: 0.7

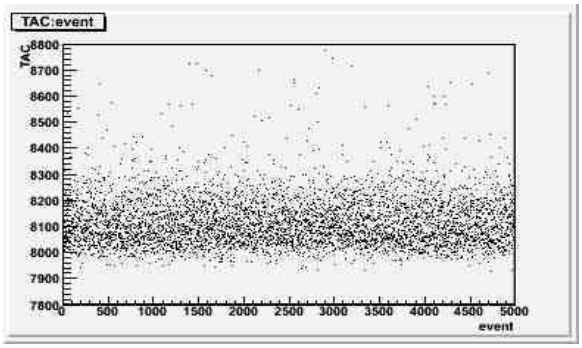




Run #: 820

MCP: New 25um tube w/ 9306 CFD Thresh: -500mV CFD Walk: 5mV HV: 2.3kV ND Filter: 0.7





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Equal time anode initial timing measurements.

Run #: 826

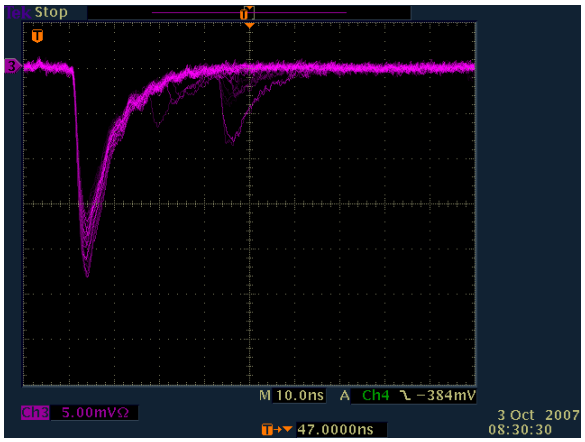
MCP: New 25um tube CFD Thresh: -50mV CFD Walk: 5mV

HV: 2.3kV ND Filter: 0.7

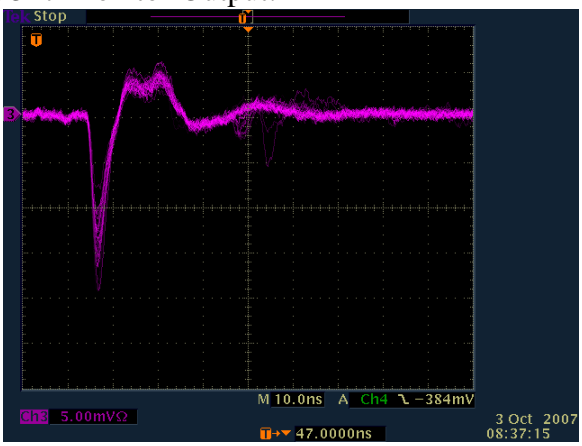
Stager Position:

Axis 1: 12.0mm Axis 3: 13.5mm

Raw Pulse:



9327 Monitor Output:



Run #: 827

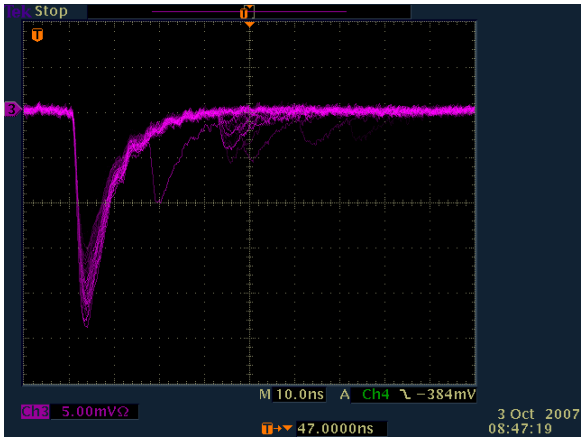
MCP: New 25um tube CFD Thresh: -50mV CFD Walk: 5mV

HV: 2.3kV ND Filter: 0.7

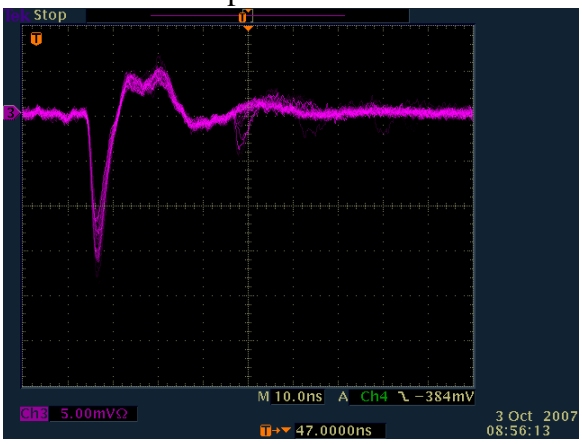
Stager Position:

Axis 1: 11.0mm Axis 3: 13.5mm

Raw Pulse:



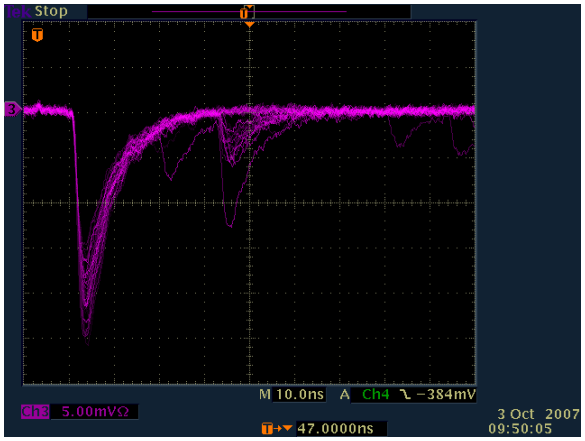
9327 Monitor Output:



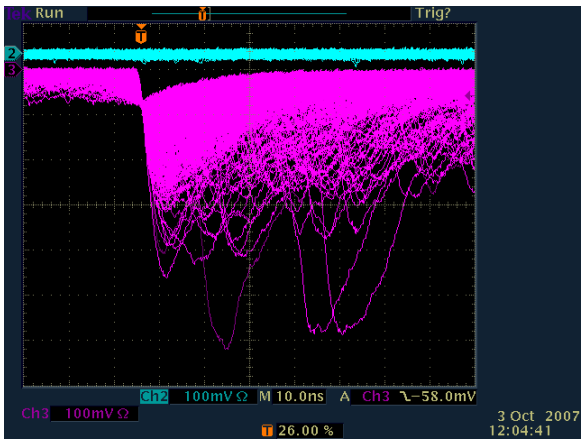
Run #: 830

MCP: New 25um tube w/ different HV splitter

CFD Thresh: -50mV CFD Walk: 5mV HV: 2.3kV ND Filter: 0.7



No laser:



Ch 2: Commercial tube HV: 2.3kV

Ch 3: NT25um HV: 2.3kV