TDIS proton rate

Aruni Nadeeshani

BONuS12 # of protons with more runs

- Run #s used :12620,12627,12628,12629

- Total run time : 5 hr 11 min =18660 s

- Current =100 nA

- Trigger rate :1.5 kHz

$0<\delta$ vz<60 mm difference of electron vertex and proton vertex
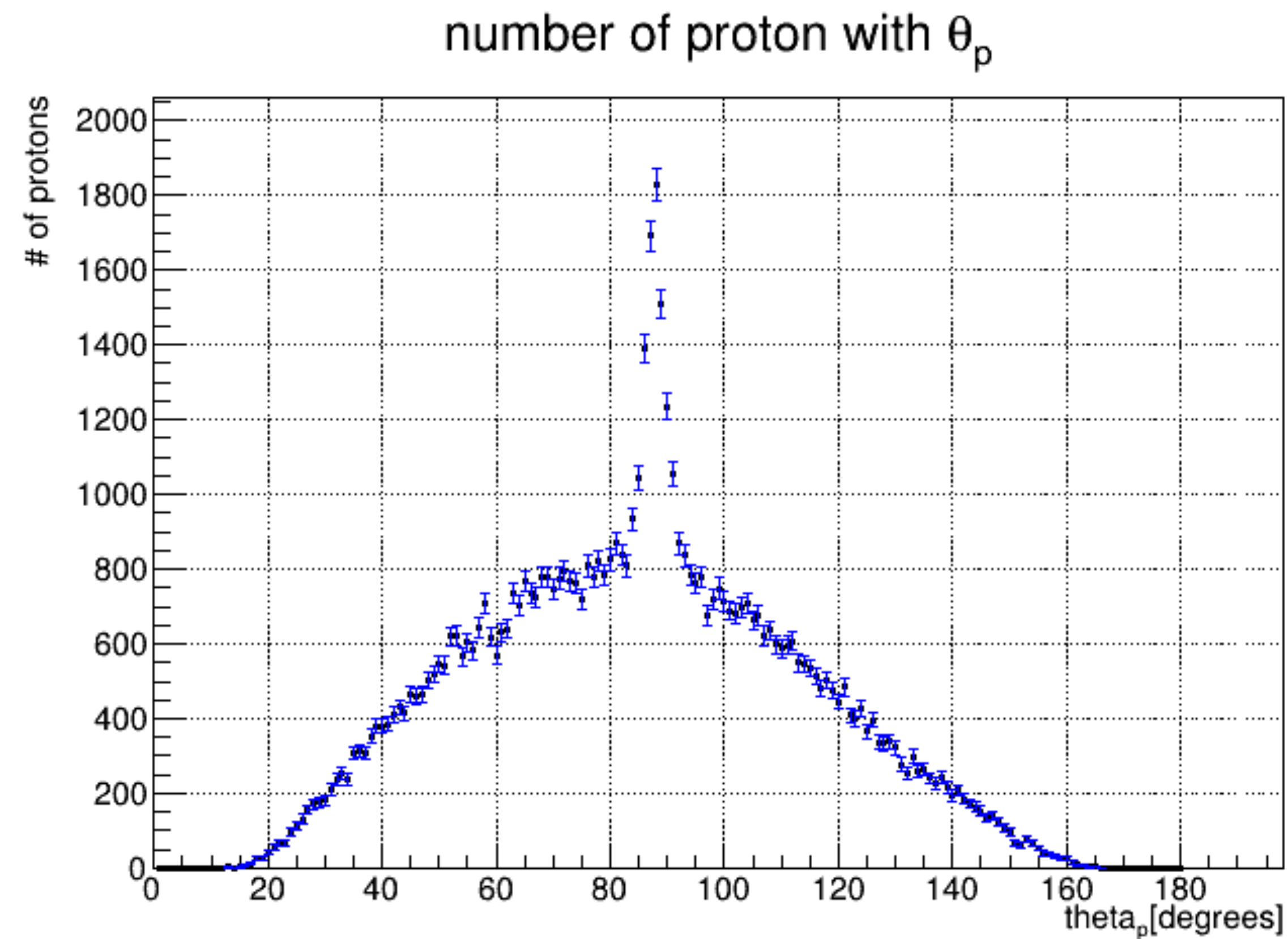
-18<Vz_e <12. Electron vertex cut

	# of protons	Rate
for bonus range $0.05 < 0 < 0.5 GeV$ $0 < \theta_p < 180$	327998	17.58
for bonus range with vertex cut	70290	3.77
for TDIS range $0.05 < 0 < 0.5 GeV$ $30 < \theta_p < 70$	84728	4.54
for TDIS range with vertex cut	20069	1.076

Proton distribution with θ_p

number of proton with θ_p

Number of entries with out vertex cut =327998

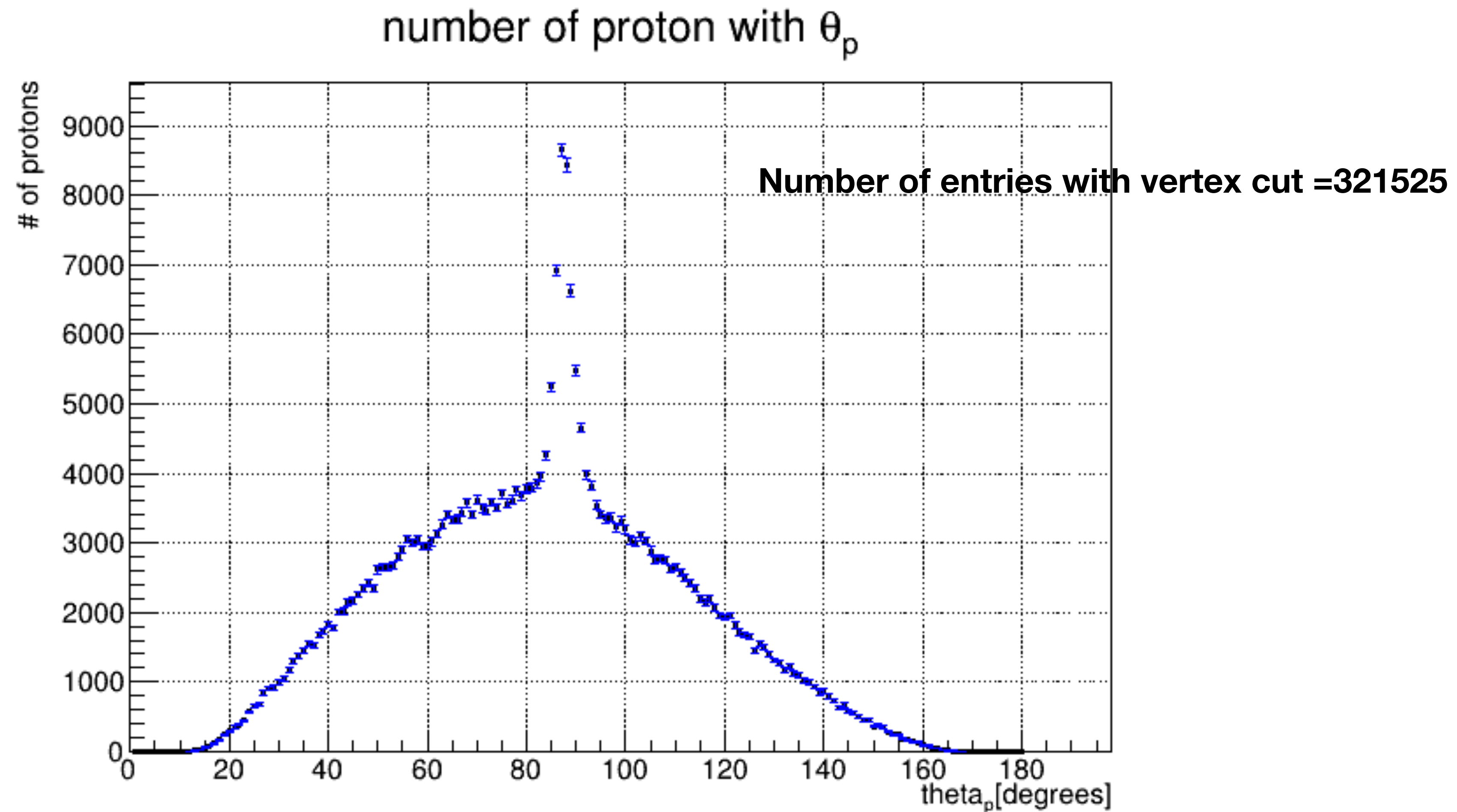# Proton distribution with θ_p
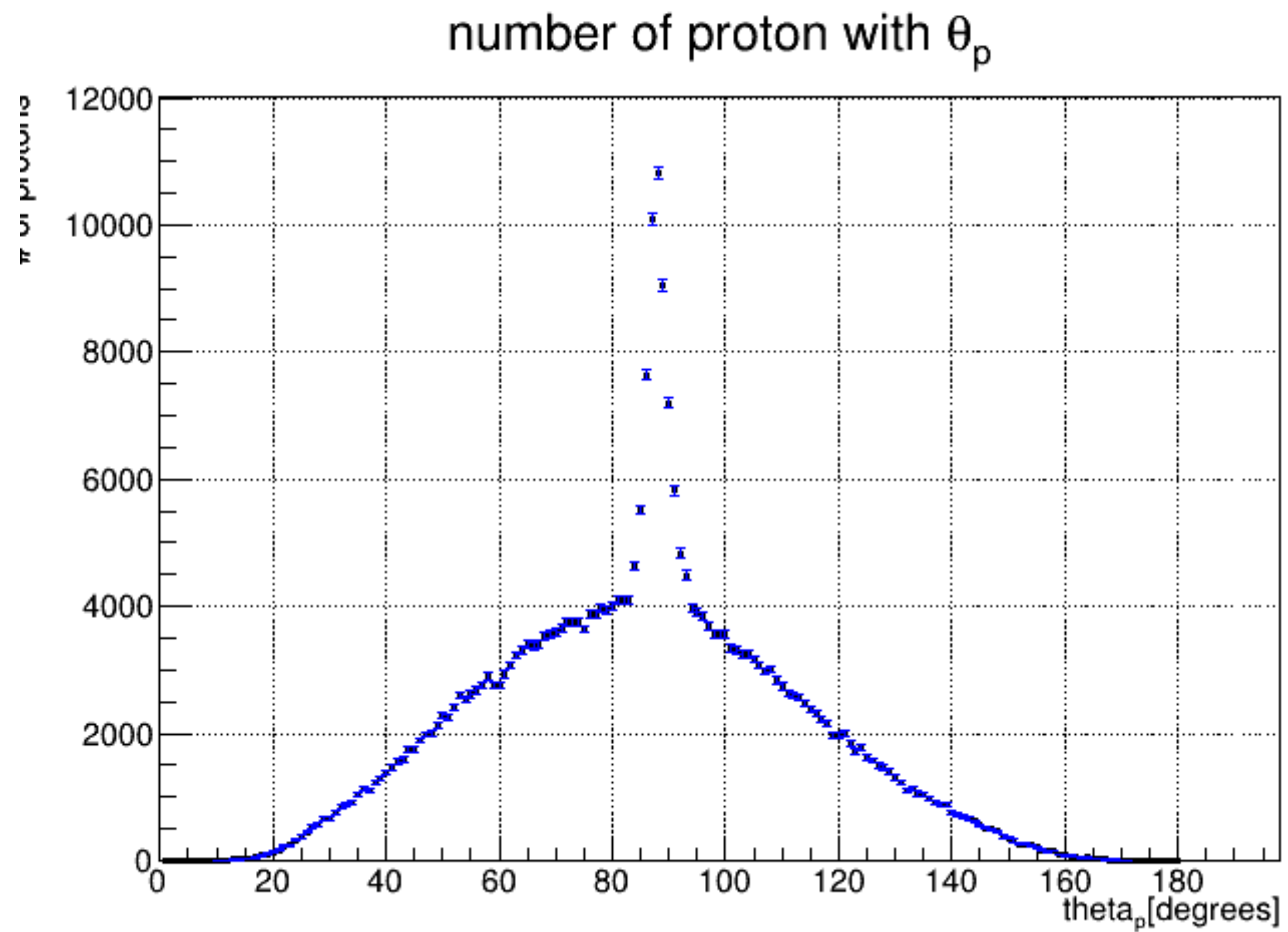
number of proton with θ_p

Number of entries with vertex cut =70290

BONuS12 # of protons with more runs

- Run #s used :12450,12451,12452,12453,12454,12455,12456,12457,12459

- Total run time : 698 min =41880 s

- Current =200 nA

	# of protons	Rate
for bonus range	1539443	36.75
for bonus range with vertex cut	321525	7.68
for TDIS range	413587	9.86
for TDIS range with vertex cut	96508	2.30

Proton distribution with θ_p

number of proton with θ_p

Proton distribution with θ_p

number of proton with θ_p
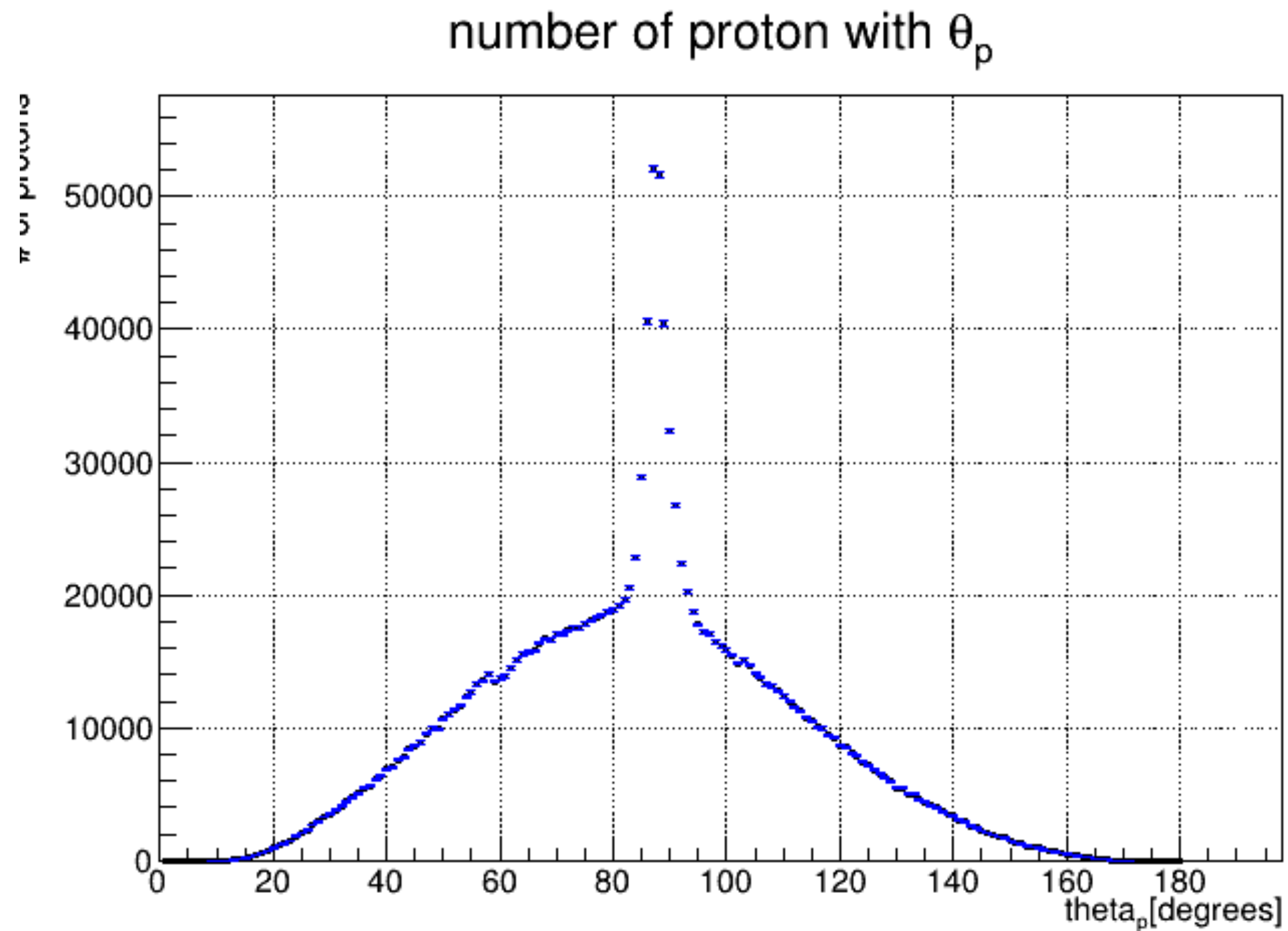
Number of protons with vertex cut =1539443

12450

CLAS12 VTP Trigger   08/08/2020 20:21:09

Beam Current (nA): 214.7 2C21 | 201.5 FCup
Electron Alarms: 1-6: NO_ALARM | 1-6 Tolerance: 0.40
Livetime: TS 93.3 | Pulser 0.0 %
Totals (Hz): 1458   1414

Bit	Description	Raw (Hz)	Prescaled (Hz)	Fraction (%)	Prescale	In Totals
0	Electron NO DC - OR of 1-6	1417	1365.0	83.0	1	■
1	Sector 1	219	205.0	12.5	1	
2	Sector 2	263	246.0	15.0	1	
3	Sector 3	238	222.0	13.5	1	
4	Sector 4	270	280.0	17.0	1	
5	Sector 5	206	200.0	12.2	1	
6	Sector 6	222	214.0	13.0	1	
7	Electron with DC - OR of 1-6	4473	88.0	5.4	50	
8	Sector 1	714	13.0	0.8	50	
9	Sector 2	820	16.0	1.0	50	
10	Sector 3	750	14.0	0.9	50	
11	Sector 4	852	18.0	1.1	50	
12	Sector 5	704	14.0	0.9	50	
13	Sector 6	668	14.0	0.9	50	
14	-	0	0.0	0.0	1	
15	-	0	0.0	0.0	1	
16	-	0	0.0	0.0	1	
17	-	0	0.0	0.0	1	
18	-	0	0.0	0.0	1	
19	-	0	0.0	0.0	1	
20	-	0	0.0	0.0	1	
21	-	0	0.0	0.0	1	
22	-	0	0.0	0.0	1	
23	-	0	0.0	0.0	1	
24	-	0	0.0	0.0	1	
25	-	0	0.0	0.0	1	
26	-	0	0.0	0.0	1	
27	-	0	0.0	0.0	1	
28	-	0	0.0	0.0	1	
29	-	0	0.0	0.0	1	
30	FTOFxPCALU S1-6	129430	0.0	0.0	0	
31	Pulser 100Hz	100	100.0	6.1	1	■

12454

CLAS12 VTP Trigger   08

Beam Current (nA): 214.8 2C21 | 201.8 FCup
Electron Alarms: 1-6: NO_ALARM | 1-6 Tolerance: 0.40
Totals (Hz): 5838   1556

Bit	Description	Raw (Hz)	Prescaled (Hz)	Fra...
0	Electron WITH DC-OR 1-6	1377	1370.0	
1	Sector 1	212	211.0	
2	Sector 2	264	264.0	
3	Sector 3	235	233.0	
4	Sector 4	245	247.0	
5	Sector 5	210	198.0	
6	Sector 6	214	221.0	
7	Electron NO DC-OR 1-6	4360	86.0	
8	Sector 1	615	12.0	
9	Sector 2	763	15.0	
10	Sector 3	743	15.0	
11	Sector 4	874	17.0	
12	Sector 5	695	15.0	
13	Sector 6	701	14.0	
14	-	0	0.0	
15	-	0	0.0	
16	-	0	0.0	
17	-	0	0.0	
18	-	0	0.0	
19	-	0	0.0	
20	-	0	0.0	
21	-	0	0.0	
22	-	0	0.0	
23	-	0	0.0	
24	-	0	0.0	
25	-	0	0.0	
26	-	0	0.0	
27	-	0	0.0	
28	-	0	0.0	
29	-	0	0.0	
30	FTOFxPCALU S1-6	127657	0.0	
31	Pulser 100Hz	101	100.0	

12457

CLAS12 VTP Trigger   08/09/2020 06:20:23

Beam Current (nA): 213.2 2C21 | 201.9 FCup
Electron Alarms: 1-6: NO_ALARM | 1-6 Tolerance: 0.40
Livetime: TS 93.6 | Pulser 0.0 %
Totals (Hz): 5892   1548

Bit	Description	Raw (Hz)	Prescaled (Hz)	Fraction (%)	Prescale	In Totals
0	Electron WITH DC-OR 1-6	1398	1352.0	83.8	1	■
1	Sector 1	229	203.0	12.6	1	
2	Sector 2	255	257.0	15.9	1	
3	Sector 3	220	213.0	13.2	1	
4	Sector 4	255	252.0	15.6	1	
5	Sector 5	222	216.0	13.4	1	
6	Sector 6	216	211.0	13.1	1	
7	Electron NO DC-OR 1-6	4402	87.0	5.4	50	■
8	Sector 1	693	13.0	0.8	50	
9	Sector 2	777	15.0	0.9	50	
10	Sector 3	724	14.0	0.9	50	
11	Sector 4	856	17.0	1.1	50	
12	Sector 5	709	14.0	0.9	50	
13	Sector 6	664	13.0	0.8	50	
14	-	0	0.0	0.0	1	
15	-	0	0.0	0.0	1	
16	-	0	0.0	0.0	1	
17	-	0	0.0	0.0	1	
18	-	0	0.0	0.0	1	
19	-	0	0.0	0.0	1	
20	-	0	0.0	0.0	1	
21	-	0	0.0	0.0	1	
22	-	0	0.0	0.0	1	
23	-	0	0.0	0.0	1	
24	-	0	0.0	0.0	1	
25	-	0	0.0	0.0	1	
26	-	0	0.0	0.0	1	
27	-	0	0.0	0.0	1	
28	-	0	0.0	0.0	1	
29	-	0	0.0	0.0	1	
30	FTOFxPCALU S1-6	126397	0.0	0.0	0	
31	Pulser 100Hz	100	100.0	6.2	1	■

Target pressure

BONuS Overview | BONuS High Voltage | **12454**

BONuS Overview

High Voltage
All On

Interlocks
Tripped: 0
Bypassed: 0

Drift Gas
Flow Rate: 249.99 sccm
Abs. Pressure: 757.95 torr
Rel. Pressure: -5.21 torr

Target Gas
Pressure: 67.06 psig
Shed Temp: 74.76 F

Low Voltage
| Crate 1 | ON | Crate 3 | ON | Crate 5 | ON |
| Crate 2 | ON | Crate 4 | ON | Crate 6 | ON |

FEUs: Current(A), Temp (deg)

	Crate 1		Crate 2		Crate 3		Crate 4		Crate 5		Crate 6	
3	4.65	47	4.73	49	4.50	47	4.65	49	4.50	47	4.58	47
4	4.50	46	4.35	47	4.73	48	4.50	50	4.50	46	4.42	47
5	4.58	47	4.73	50	4.80	49	4.42	49	4.50	46	4.58	47
6	4.73	50	4.50	49	4.58	48	4.42	50	4.42	47	4.65	49
7	4.73	49	4.35	48	4.42	47	4.35	50	4.50	47	4.50	48
8	4.73	52	4.50	52	4.58	50	4.50	54	4.58	50	4.50	51

NActive crates: 6   Active crates IDs: ID 1 2 3 4 5 6