

# Run Coordinator Report, 28<sup>th</sup> April - 5<sup>th</sup> May

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Tuesday 28<sup>th</sup> April

- Data taking at 1-pass beam; 6 uA;  $p = 1.1759$  GeV/c
- R-HRS VDC trip; required access to swap power supply ~ 2.5 hours
  - Possible bad relay card
- Continuing with detector checks/calibrations

Wednesday 29<sup>th</sup> April

- Neutron detector ADC problems; access to troubleshoot ~1.5 hours
- Pass change: 1<sup>st</sup> -> 3<sup>rd</sup> pass ; beam off all DAY shift
- Moved neutron detector; 54 degrees, 8m; added lead wall
- Access to fix Compton network cable; compton setup & checkout
- L-HRS Q2/Q3 controls issue – VME relay card
- Limit beam current to 10 uA due to target cell density
- Finish day with beam in hall and checking raster size and rates

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Thursday 30<sup>th</sup> April

- Data taking during OWL shift
- Happex DAQ crashed – reboot problematic due to slow network ~ 1.5 hours
- Accelerator having injector problems; spot move ~ 07:00
- Moller measurement; 84.1 % polarisation; Wien angle = 74.83
- Resume production running on helium-3
- Further Compton commissioning

Friday 1<sup>st</sup> May

- MCC problems during OWL shift; injector work ~ 4 hours
- Opportunistic access to address Happex DAQ network switch
- Resume data taking on polarised helium-3
- Meeting with accelerator to address the Compton viewer
  - ➔ Add software alarm in MCC if electron detector moves from 'garage'

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## Saturday 2<sup>nd</sup> May

- Smooth production running all day
- Reference cell tests on helium, nitrogen and hydrogen
- Returned to production data taking before Sunday OWL shift

## Sunday 3<sup>rd</sup> May

- Smooth production data taking all day
- Left-arm gas cherenkov adc channel 6 amplitude fluctuating
  - ➔ to be investigated

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## Monday 4<sup>th</sup> May

- Relatively smooth data taking all day
- Swapped target gas bottle to deuterium – short access ~ 0.5 hours
- Deuterium and carbon optics data taken
- Resume production running on polarised helium-3
- MCC had magnet power supply problems ~ 2.5 hours down time

## Tuesday 5<sup>th</sup> May

- Beam studies from 07:00 – 14:00
- Controlled access in hall
- Techs work – remove lead wall; change target gas bottle to hydrogen; panel size for BigBite power supply
- Students troubleshooting any detector/DAQ issues
- Plant services to fix AC drain issue in detector hut

# Summary

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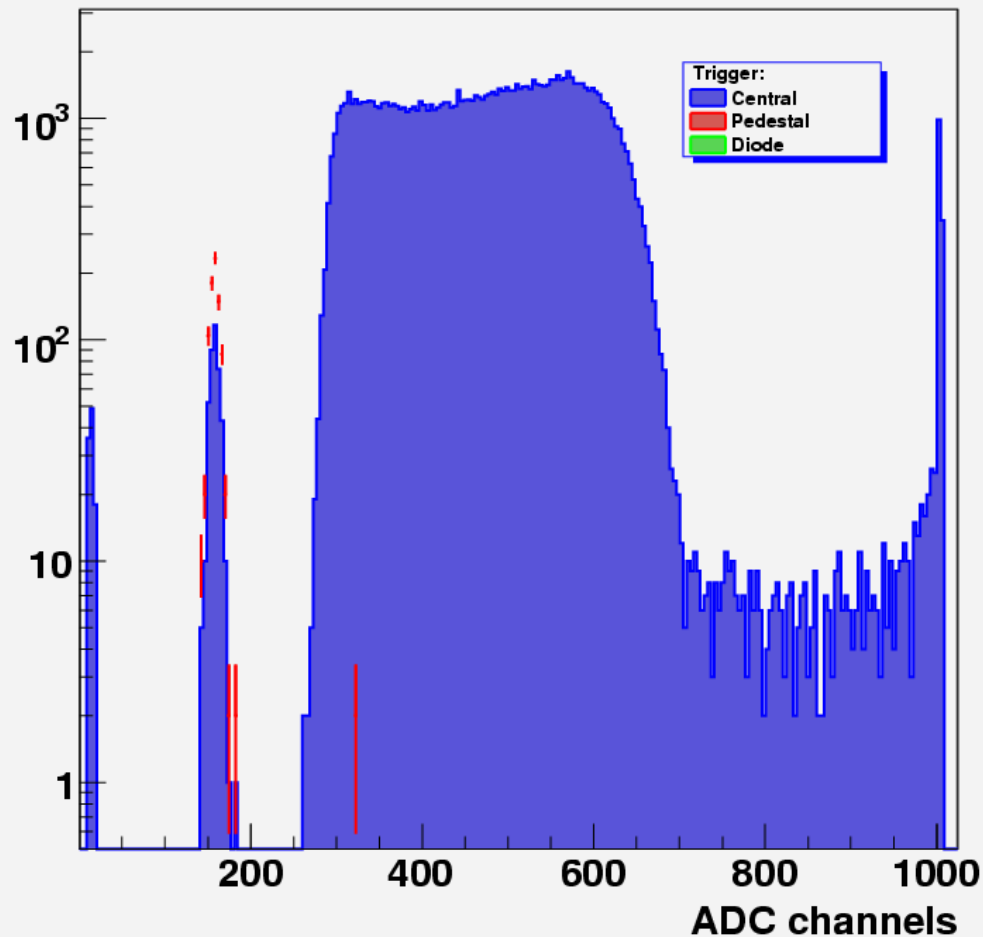
- ABU = 105.9 ; ~ 60%
- BANU = 18.6
- BNA = 51.5
- **Preliminary** results indicate >125 M *good* electron events from 3-pass data!

## Upcoming Plans

- Beam studies on Thursday
  - RF recovery ~ 3 hours
  - possible 'heat reactivation' of injector gun if QE degrades significantly
- Pass change: 3<sup>rd</sup> -> 2<sup>nd</sup>
- Move neutron detector for 2-pass kinematics
- Moller measurement
- BigBite detector calibrations
- Target cell change, likely Monday morning ~ 36 hours; resume Tuesday swing

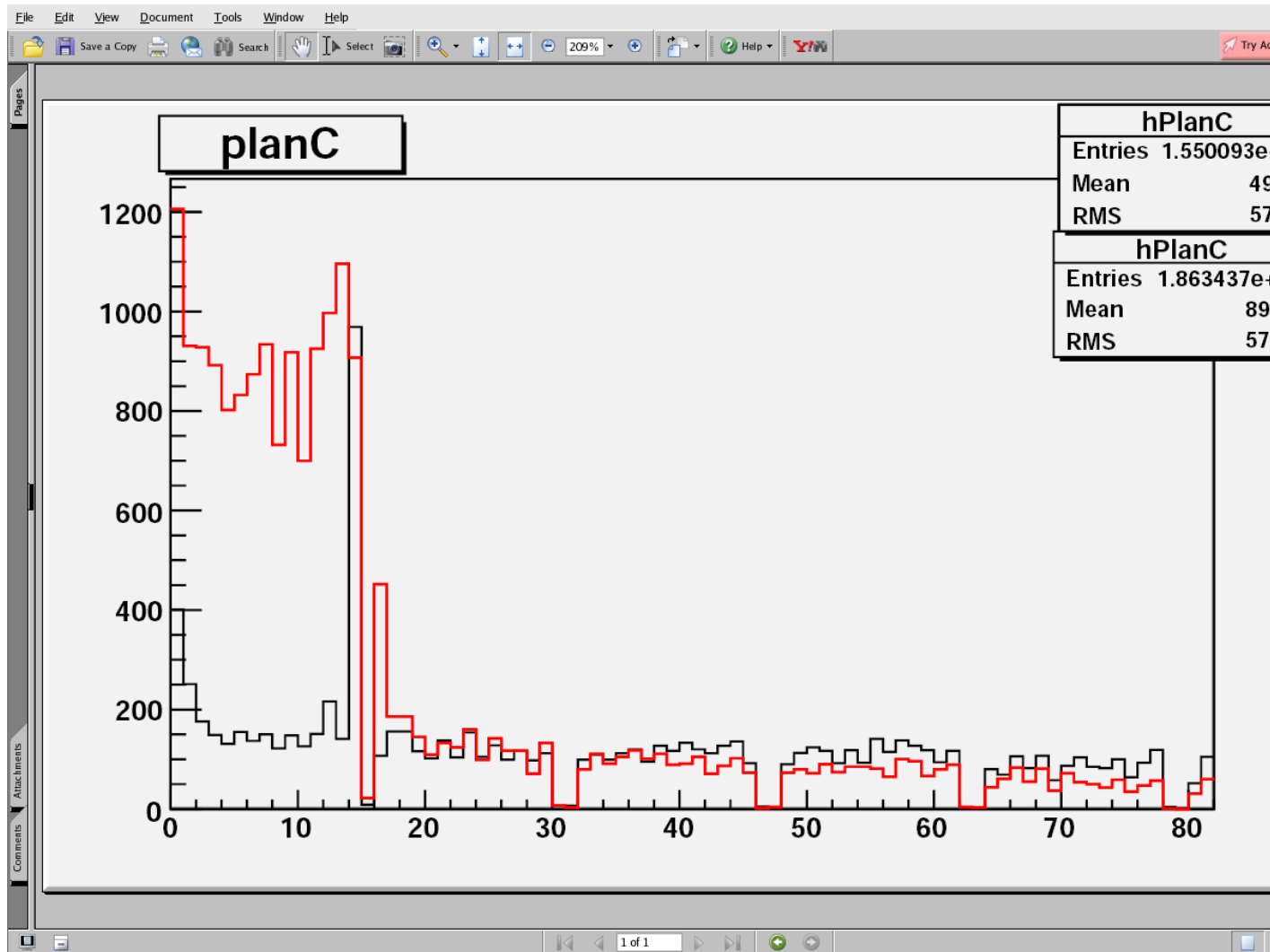
# Compton Photon Detector Spectrum

## Central Crystal



- Successful photon detector Setup and tune
- Cavity ~ 1 kW
- Signal:background > 100 !!

# Compton Electron Detector Spectrum



- Red = laser ON
- Black = laser OFF
- Working detector

# Compton Beam Viewer

