



SANE Experiment Status

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and
SANE Collaboration**



Outline

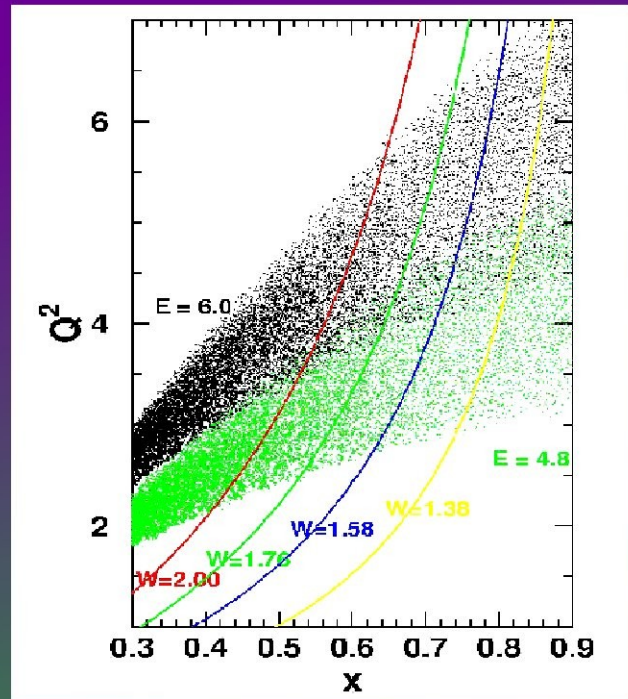
- Goal
- Experiment
- Cerenkov
- BIGCAL
- Tracker
- Lucite



Goal

- Measure proton spin structure function $g_2(x, Q^2)$ and Spin asymmetry $A_1(x, Q^2)$ at momentum transfer $2.5 < Q^2 < 6.5 \text{ GeV}^2$ and $0.3 < x < 0.8$
- Study twist-3 effects and moments of g_2 and g_1
- Test polarized local duality for $W > 1.4 \text{ GeV}$

Experiment



Target

- UVa NH3 target

- 5 T field

Beamline

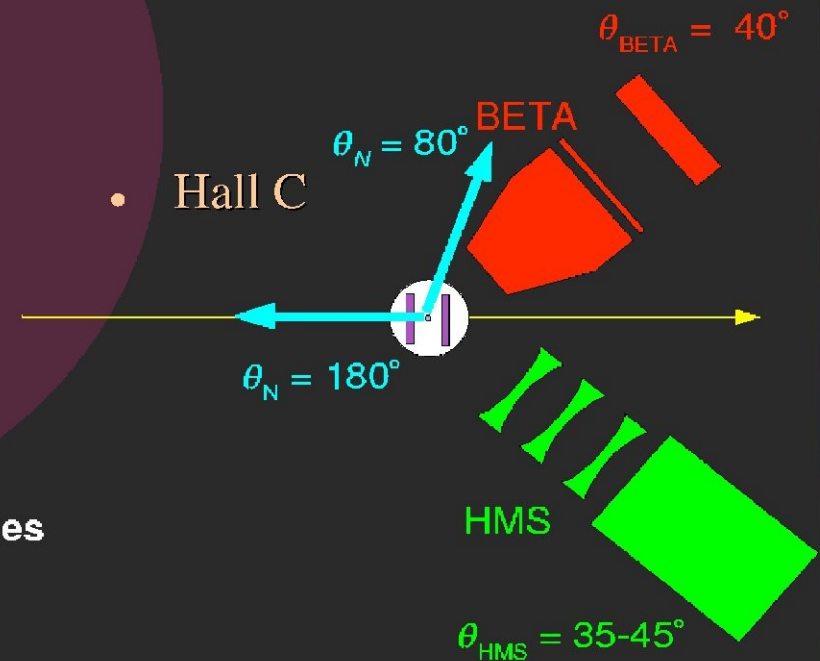
- Chicanes
- SEM
- He Bag

Electron Arm

- BETA

Background Studies

- HMS



- Two beam energies:

- 6 GeV (black)

- 4.8 GeV (green)

- CEBAF polarized beam

- 85 nA

- 75% beam polarization

BETA Cerenkov

Problems:

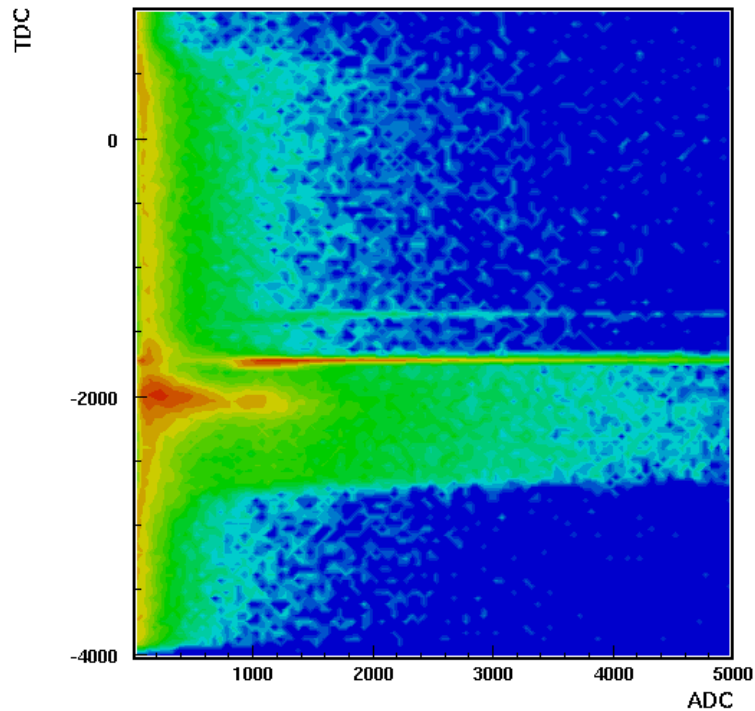
At the beginning of the commissioning channel 5 failed (no signal) ✓

High magnetic field around phototubes ✓

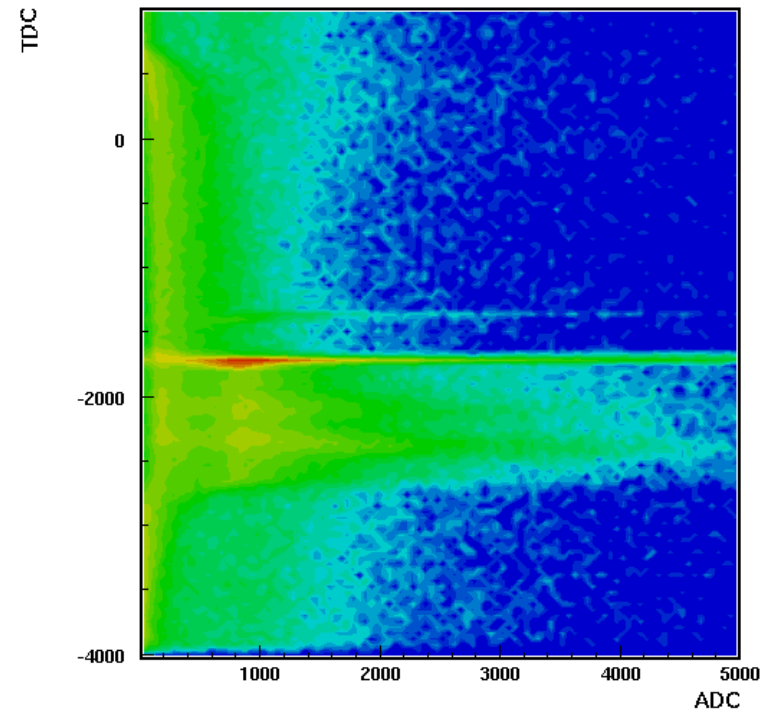
Multiple Hits in TDC ✓

Geometrical Matching with BigCal (Work in Progress)

PMT 4



PMT 5



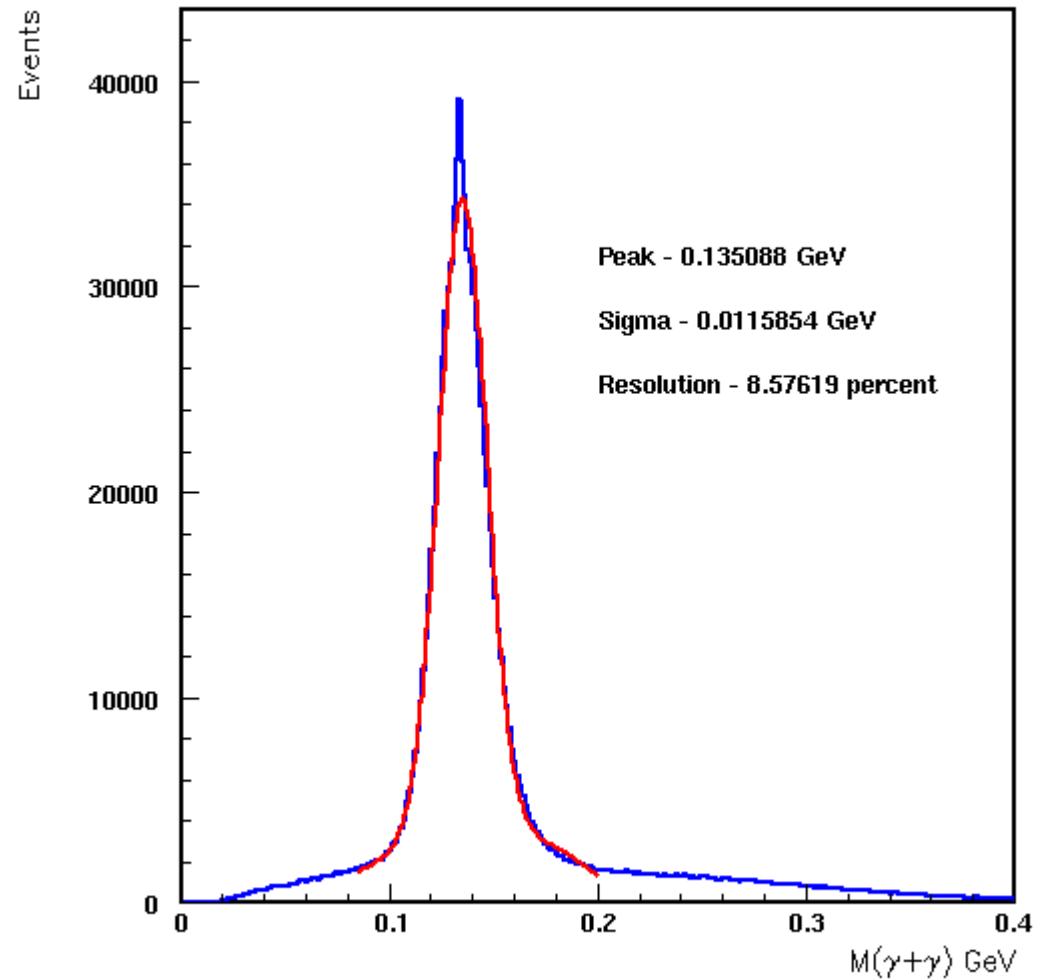
BIGCAL

π^0 Calibration in progress

Obtained resolution is around
8.5 %

Coordinate reconstruction
correction function was obtained
from the data.

Working on adjusting gain
parameters.



TRACKER X plane

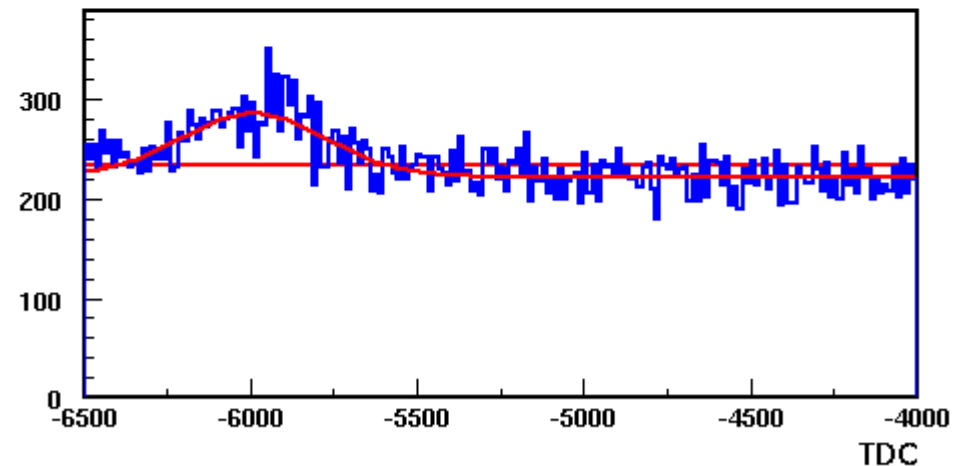
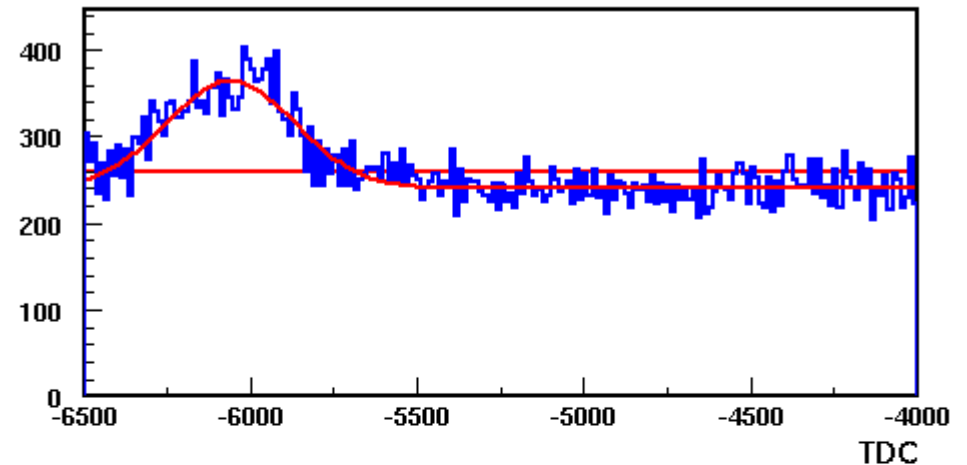
Two of PMT's show signal

Problems:

Low count rate

Very sensitive to HV

Some channels connection to phototube

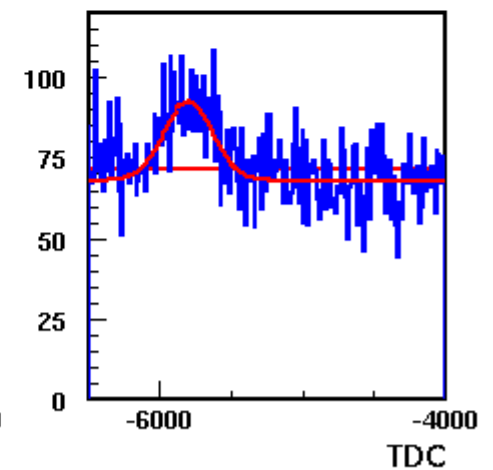
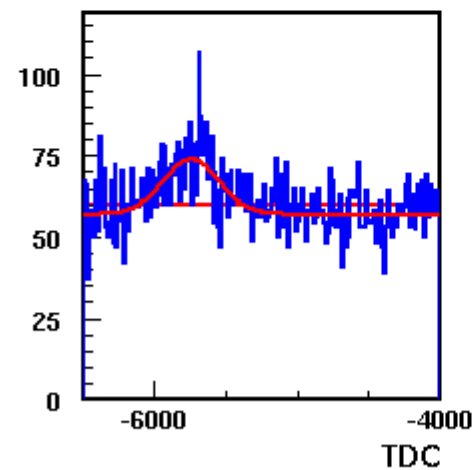
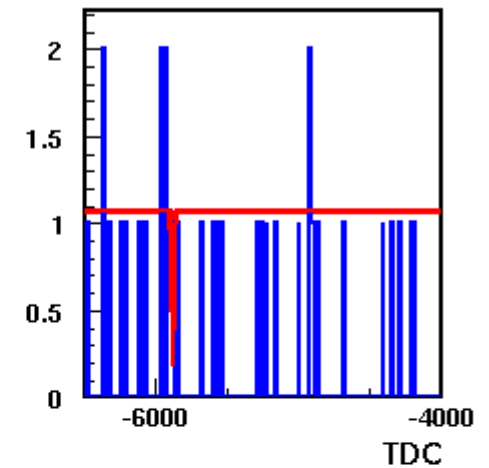
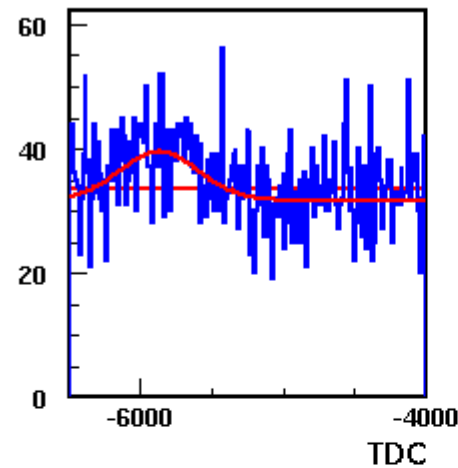


TRACKER Y1 plane

Three of PMT's show signal

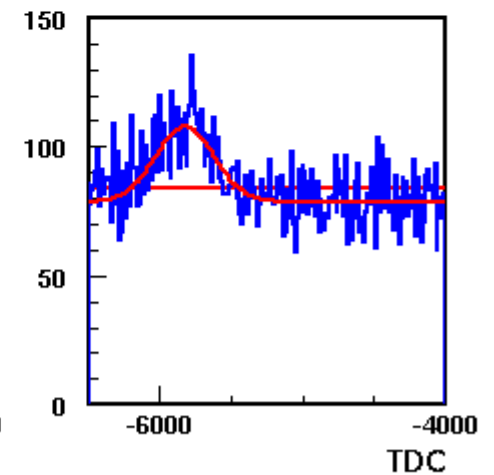
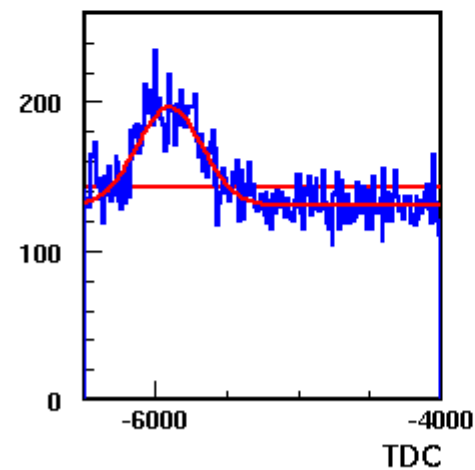
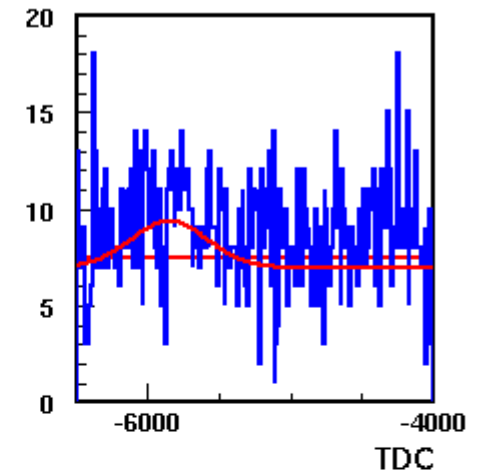
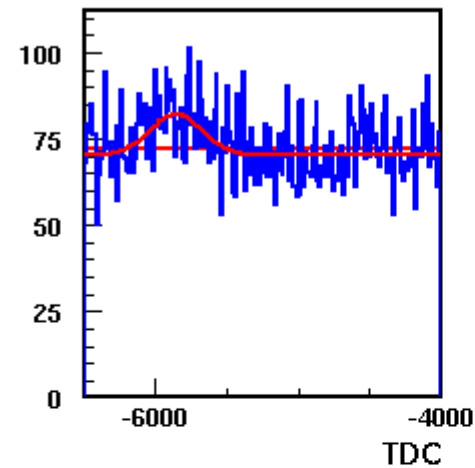
Working on PMT 2

Problems are the same as for X plane



TRACKER Y2 plane

Three of PMT's show signal
PMT 2 has problems



Lucite

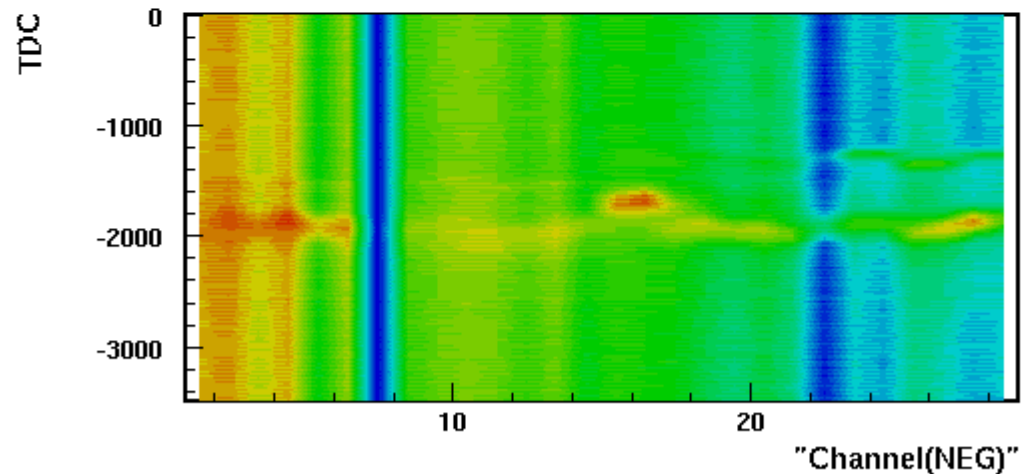
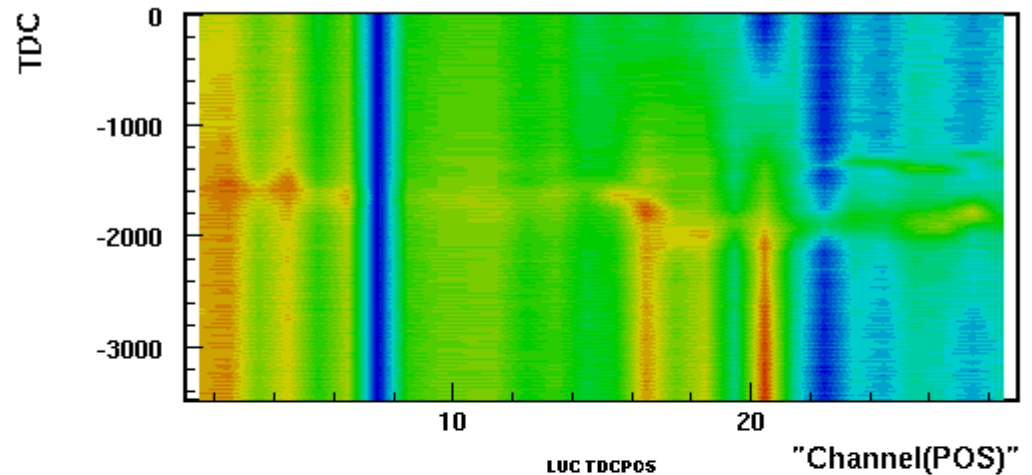
Detector is working.
(partially channel #7 has no signal
in NEG counter)

Working with HV to improve
efficiency. (currently ~50-90%)

Negative:

Perpendicular field setting fills the
detector with background.

Part of the detector does not have
ADC signal.



Summary

All detectors are operational

Tracker has some problems

During work on target part of the tracker was damaged.

Cerenkov, Lucite and Bigcal work fine

SEM was not repaired

About target in next talk

we are
~~I~~m absolutely committed
to getting the right result!

