MIPP Update
Fermilab All Experimenters' Meeting
02/28/05

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Week-in-Review

(it's been a pretty smooth week!)

- Beamline studies
- Scinteraction trigger installation
- Cryo-target installation
- Data collection summary

Beamline Studies

- Scraping in our beamline causes spray events in our detector to be read out, reducing our DAQ rate and falsely triggering our interaction trigger. Currently we see a significant amount of spray events in our data.

- A new beam tune has been developed by Andre and Valeri Lebedev that should reduce the amount of scraping in the beamline elements downstream of the momentum collimator. Carol Johnstone is also working on reducing the amount of scraping with the previous tune.

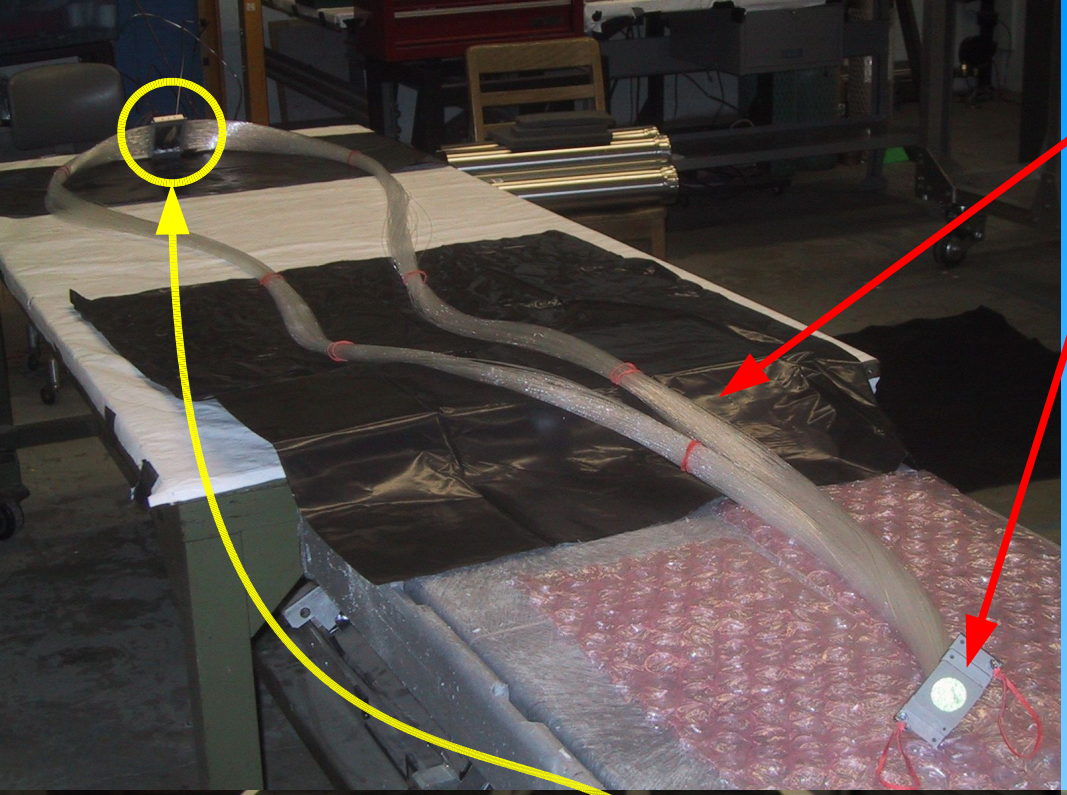
- Physics-quality data were collected using the new beam tune, but we have reverted to the previous tune until the new tune is verified to have improved matters with little degredation in the momentum resolution.

“Scinteraction” Trigger Installation/Commissioning

- A new scintillator detector was constructed at Indiana University to be used in our interaction trigger (hence the name scinteraction). The inclusion of the scinteration detector into our trigger should provide a net gain (up to a factor of 2.5) in the efficiency of our interaction trigger.

- A quick HV scan study was conducted during the evening of 02/22. From this study we have decided to operate the PMT of the detector at 1100V.

- During the evening of 02/24, the scinteraction detector was installed ~ 1 cm downstream of our target. A discriminator threshold scan was then conducted, where physics-quality minimum bias data were collected but the trigger latch signals were read out. This data is still being analyzed.

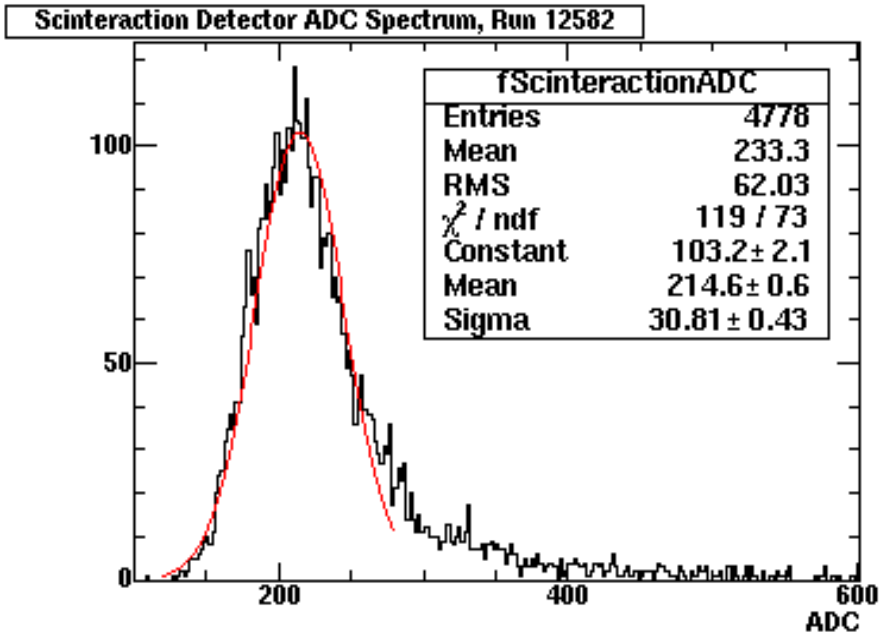


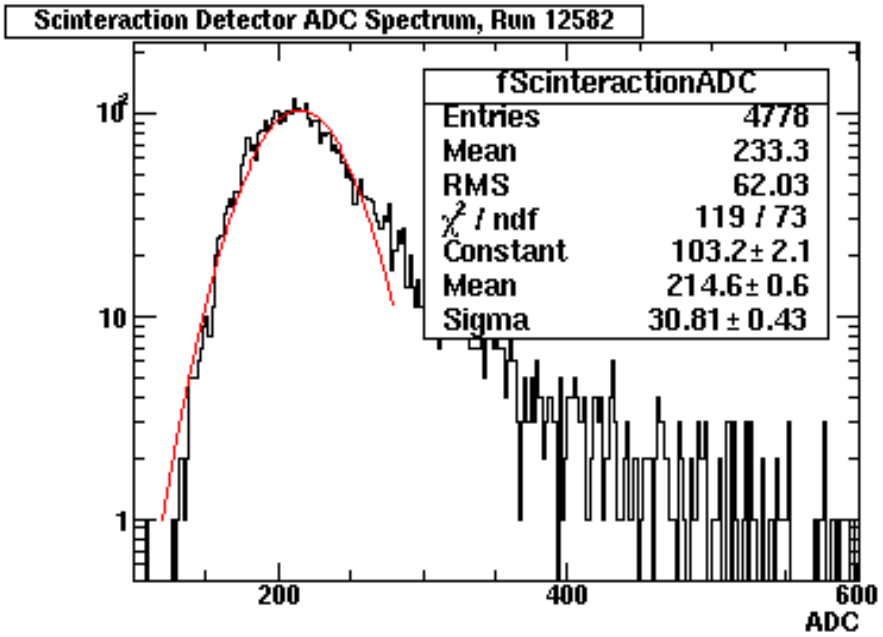
Clear fibers that pipe light from the scintillator ~10' away from target area.

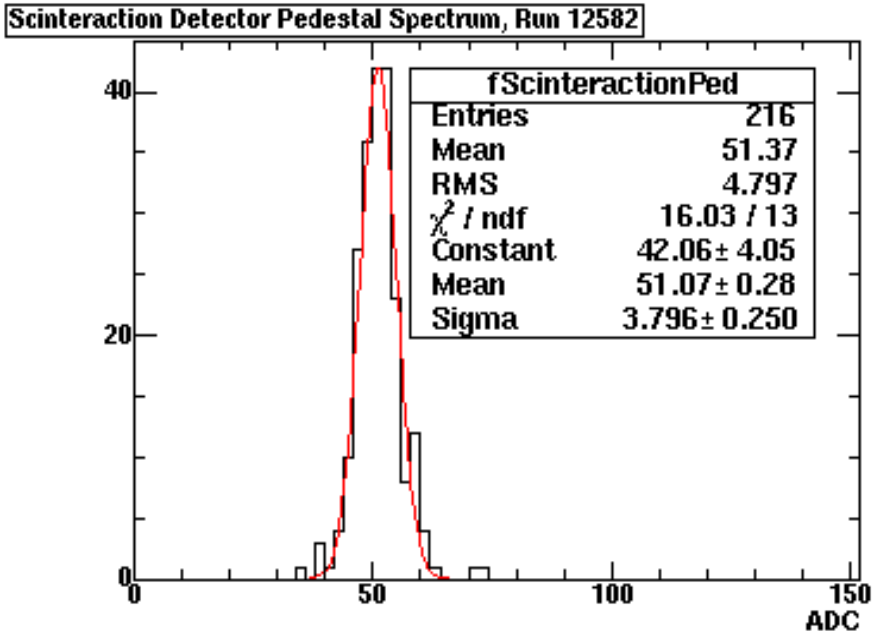
Fibers merge into a MINOS “cookie”, which is then attached to the face of a PMT.

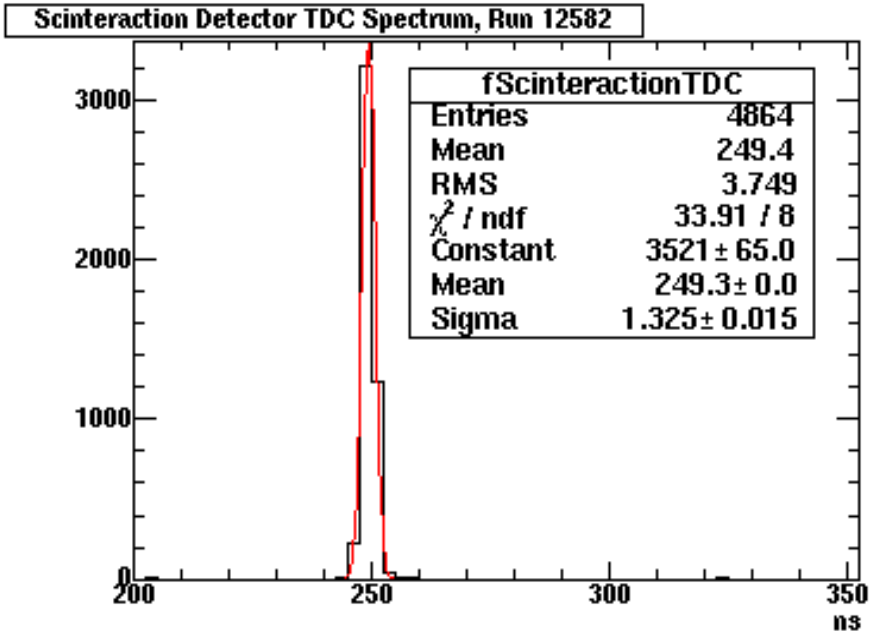
Fibers and PMT are enclosed by light-tight Al stove pipe. The scintillator and ~2' of fibers are wrapped in black plastic.

Scinteraction Detector ADC and TDC Spectra









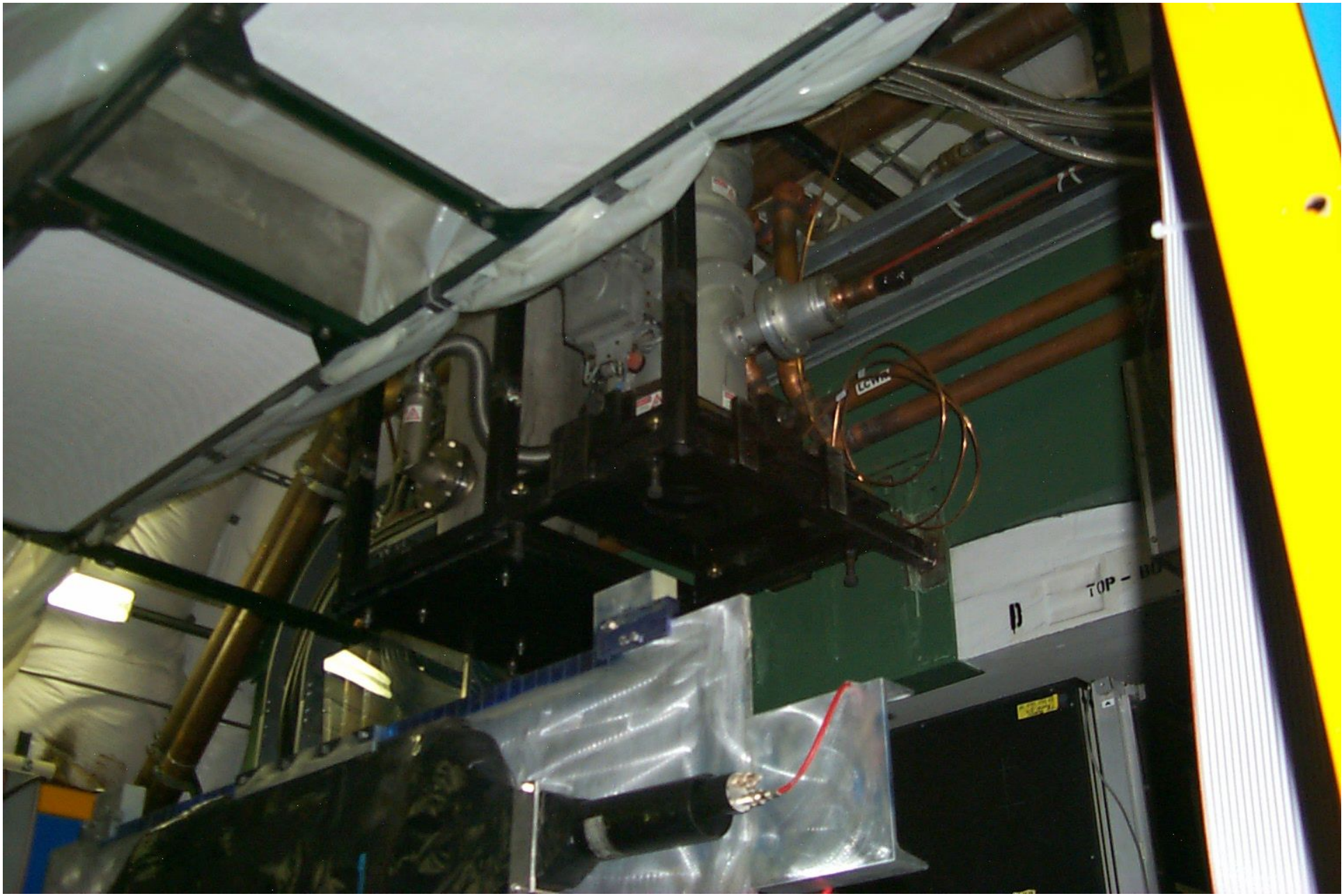
Cryo-target Installation

- Thursday 02/24/05 evening: cryo-trap, pump-cart, chiller, compressor, buffer-volume, and refrigerator moved from Mtest to MC7 and installed in their final locations.

- Saturday 02/26/05 morning: several vacuum hoses, cabels, and pipes were run. The H2 gas shed was moved from MDB to MC7.

- This morning (02/28/05) installation and surveying of the target vessel and leak-checking of the system have started.

- Tonight we will take calibration data with no target and no magnetic field.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Data Collected This Week

Momentum (GeV/c)	Target	Total Events
-50	Bismuth	265k
-50	Beryllium	98k
-50	Carbon	35k
-50	Aluminum	35k
-50	Empty	34k
30	Carbon	80k
30	Aluminum	47k
30	Empty	30k

Data Collected This Year...

Target	Momentum	Total Events	Target	Momentum	Total Events
Aluminum	-50	35k	Carbon	-50	35k
Aluminum	-30	20k	Carbon	30	81k
Aluminum	30	47k	Carbon	40	10k
			Carbon	50	195k
Beryllium	-50	313k	Copper	-50	22k
Beryllium	30	2k	Copper	-20	22k
Beryllium	50	276k	Copper	15	11k
			Copper	40	17k
Bismuth	-50	684k	Silver	15	3k
Bismuth	-30	214k	Silver	20	5k
Bismuth	30	276k	Silver	30	5k
Bismuth	50	372k	Silver	40	6k
Empty	-50	141k	Empty	40	13k
Empty	-30	50k	Empty	50	190k
Empty	30	83k			

Summary/Run-plan for This Week

- **This past week:**
  - 650k events were collected this past week with various momenta and targets.
  - Beam was in general steady and smooth.
- **This coming week:**
  - Complete installation of the LH2 target.
  - Possibly continue more studies with the scinteraction detector (this should have little impact on physics-quality data collection)
  - Begin data collection using the LH2 target.