

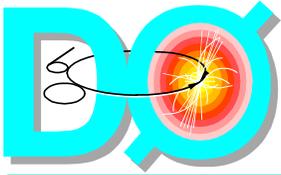
DØ Status and Operations

June 17 – 24, 2002

- **Notable “features” of the last week**
 - ◆ Upgraded L1 Calorimeter trigger eta coverage
 - ◆ Integrating L2 running into regular operations
 - ◆ Progress on L1 Central Track Trigger
 - ◆ Debugging multibuffer readout
 - ◆ Trigger Framework Prescaler issues
 - ◆ Water leak in SMT

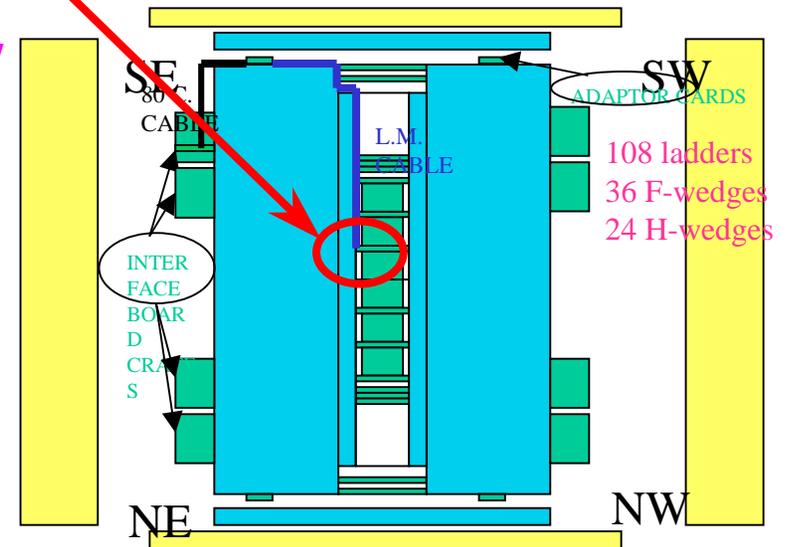
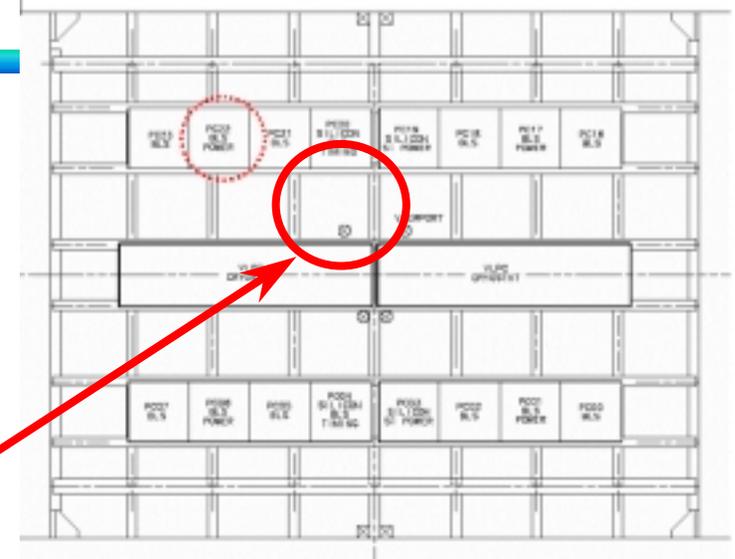
Stores	Delivered Integrated Luminosity	Utilized Luminosity	Live Luminosity	Live fraction	Rate to tape
3	0.42 pb ⁻¹	0.36 pb ⁻¹	0.16 pb ⁻¹	44.4%	9.4 Hz



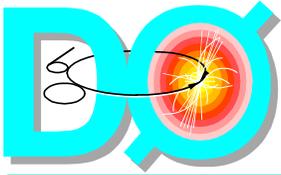


SMT Status

- Detector and supplies in good shape
- Investigating noise, studying optimization of timing and thresholds
- Trips on water drip detection on the East Cathedral power supplies
 - ◆ 06/16 04:57 trip E cathedral supplies
 - ◆ 06/17 15:00 PC 21 trip. Discovered water on platform from SE waveguide chute. Quick pressure test at 80 psi of SMT cooling lines did not reveal anything
 - ◆ 06/18 Added 2.6 gallons to DCW (believe related mostly to heat exchanger swap in MCH2)
 - ◆ 06/20 17:00 inspection - some condensation in a few areas but nothing major
 - ◆ 06/22 00:27 Added 2.7 gallons to DCW
 - ◆ 06/22 06:23 trip E cathedral supplies
 - ◆ 06/22 14:20 PC22 trip
 - ◆ 06/23 12:00 installed "gutter"
 - ◆ 06/23 21:00-00:00 4 trips on E cathedral supplies
 - ◆ 06/24 10:00 Pressure test on East cathedral supply indicates slow leak
 - ◆ Collecting about 250 ml in 10 hours
- Being discussed and will make recommendation tomorrow



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CFT/CPS/FPS & Lum Status

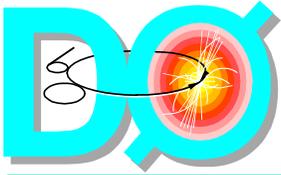
- CFT

- ◆ 196 of 198 AFE boards installed
 - ▲ All CFT+CPS instrumented
 - ▲ 94% of FPS instrumented
 - ▲ Some issues with VME crate readout for FPS - resolved
- ◆ New firmware to reduce spread in V_{ref} values which improves the SVX threshold uniformity hence reduces occupancy
 - ▲ Now 2% occupancy without beam (before was set to obtain 5%)
- ◆ Continue to study the behavior to optimize performance and improve reliability

- Luminosity

- ◆ Stable operation with Run 1 electronics
- ◆ Working on Run 2 electronics with commissioning soon





Calorimeter & Muon Status

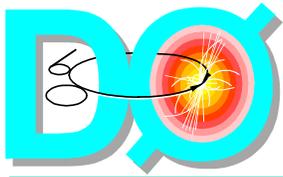
- **Calorimeter/ICD**

- ◆ Running smoothly
- ◆ Investigating zero suppression thresholds and implications
- ◆ Debugging multibuffer readout glitches
- ◆ L1 Calorimeter Run 2 receiver cards installed for $|\eta| < 2.4$
 - ▲ Before had coverage for $|\eta| < 0.8$ with Run 1 electronics
 - ▲ Debugging few bad channels and investigating some noise issues
 - ▲ Gain calibration need to be understood and adjusted for η dependence

- **Muon**

- ◆ Detectors are running very smoothly
- ◆ Minor HV/board problems resolved this week on a few chambers
- ◆ Resolved a number of issues in VME readout software
- ◆ Still some work to port readout software from 68k to PPC
- ◆ Investigating “accidental” turn-ons of pulser systems





DAQ and Trigger Framework

- **DAQ**

- ◆ New cDAQ performing very well

- ▲ Improving monitoring, resets etc

- ◆ Still needs to be fully stress tested with random triggers from live beam crossings and high rate in multibuffer mode

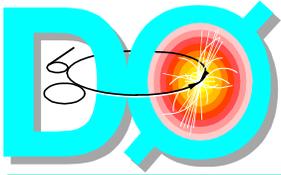
- ◆ Upgrading software to incorporate new tracking triggers

- **Trigger Framework**

- ◆ Locking patterns within prescaled triggers realized a few weeks before shutdown – investigated and understood

- ◆ Solutions still being investigated

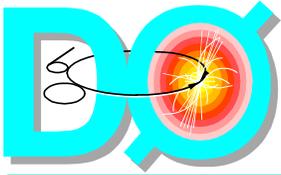




L1 Central Track Trigger

- All hardware installed and cabled
- Upgraded firmware installed for CFT axial subsystem and tested on platform
- Fake track stubs transmitted from AFE through to input to L1Muon (**but 230 ns late**)
 - ◆ Believe we can quickly gain 132 ns from changing trigger timing by one tick and another 50-60 ns from timing on SIFT latch – under investigation
- AFE to trigger wedge remapping firmware corrected and updated last week
- Mapping from AFE to DFEA verified with fake tracks
- Tracking board (DFEA) firmware with improved diagnostics updated
- Somewhat hampered in commissioning until recently due to new DAQ/L2 as could not run concurrently with global data taking

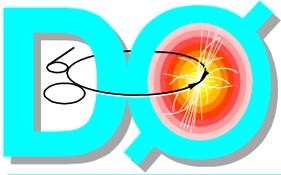




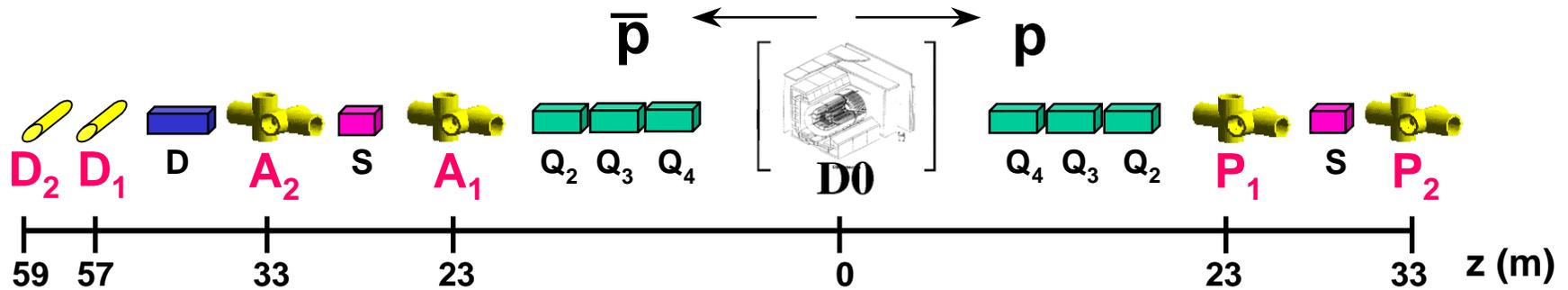
L2 Trigger Status

- Currently running in single buffer mode
 - ◆ ~90 Hz L1 accepts, ~70 Hz L2 accepts
- Rejection being done on Cal and Muon data
- Started commissioning L2 under multibuffer environment which will significantly increase input rate to L2 (100 Hz → few kHz)
- Upgraded L2 FW code during shutdown
 - ◆ Added code so L2 “listens and responds” more actively to COOR
 - ◆ Adjusted L2 for more robust operation in real system
- L2Muon: Ability to disable individual SLIC (FE Muon) inputs
- L2Cal: Using $|\eta| < 0.8$ currently
 - ◆ Have inputs for $|\eta| < 2.4$ and commissioning the extended eta region
- Improving on error reporting to diagnose glitches and debug multibuffer running





FPD Status



After the shutdown are operating with:

- 6 Detectors installed at: D1, D2, A1I, A2I, P1D, P2D;
- 6 Pseudo-detectors (trigger counter) at: A1U, A1D, P1U, P1O, P2U, P2O.

Starting to take diffractive data:

- Require hits in the Dipole detectors;
- Veto on Luminosity Monitor and Veto Counter on the antiproton side;
- Require activity in the LM and VC on the proton side.

