



Data Taking Statistics

Week of 2003 January 6-12

Day	Date	Normalizable Luminosity (nb-1)				Hours			Evts (k)	Eff.
		Del	Util	Live	Rec	Store	Util	Rec		
Mon	6-Jan-03	258.77	256.00	230.21	230.06	6.8	6.7	6.5	1098	0.889
Tue	7-Jan-03	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0	0.000
Wed	8-Jan-03	192.31	92.26	68.87	68.64	2.9	1.4	1.3	190	0.357
Thu	9-Jan-03	634.02	609.20	524.48	521.88	12.9	12.4	11.2	1695	0.823
Fri	10-Jan-03	587.92	491.05	391.63	389.38	8.1	6.9	6.5	787	0.662
Sat	11-Jan-03	1373.22	1207.96	1033.88	1027.14	21.8	19.3	18.1	2455	0.748
Sun	12-Jan-03	367.10	363.15	321.11	320.35	7.1	6.9	6.5	859	0.873
		3413.3	3019.6	2570.2	2557.5	59.6	53.6	50.1	7084	0.749

- We had to sacrifice some efficiency this week
 - Accumulate statistics on new triggers & test new filter tools
 - Offline studies on performance over shutdown
 - Special Runs for Tracking & Jet Trigger Studies
 - DAQ Rate test to establish next bottleneck to L1/L2 ~ 5/1kHz
- Power outage this morning & subsequent online system upgrades, cooling water shutdown, etc. prevents a full accounting of this week's Physics numbers
 - Will revise later & link from D0 Operations web page



Delivered Luminosity Losses

Major Sources of Downtime: Not recording during a store

8-Jan-03	21:03	1.00	Begin Store 2146; Noisy L1CAL Trigger; Rescrape Pbars
8-Jan-03	23:14	0.50	Mask Noisy MDT Wires
10-Jan-03	19:10	0.73	Track Study
11-Jan-03	0:57	0.32	L1 Muon LV PS Trip
11-Jan-03	1:59	0.36	Noisy TTK Triggers
11-Jan-03	9:49	0.92	Four L2 CAL crashes

Other Losses

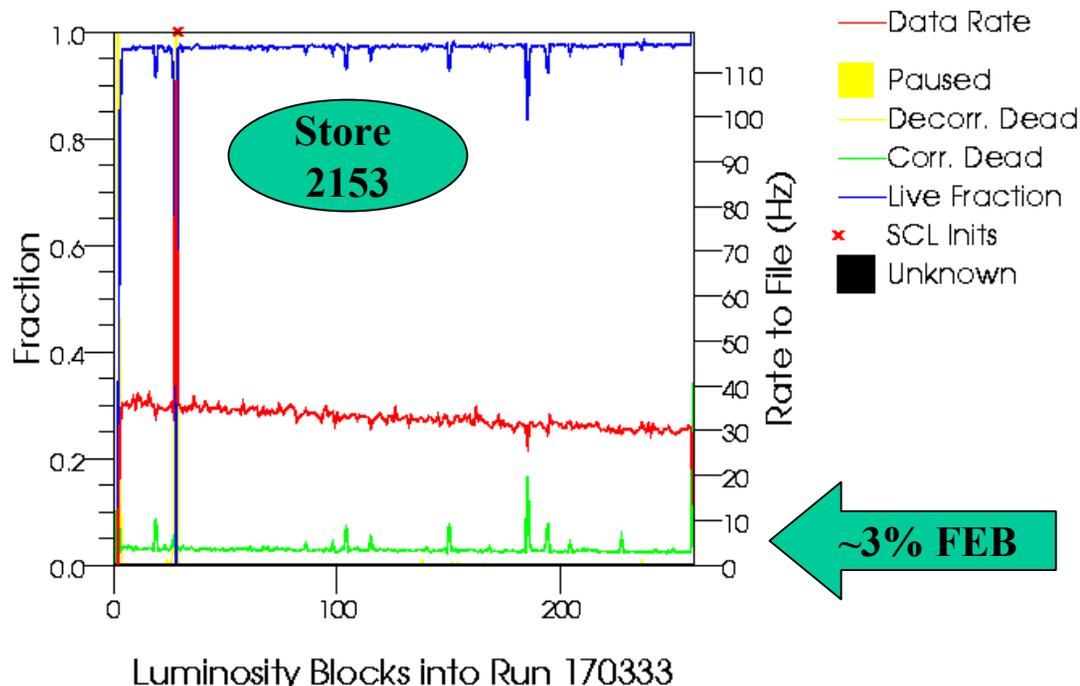
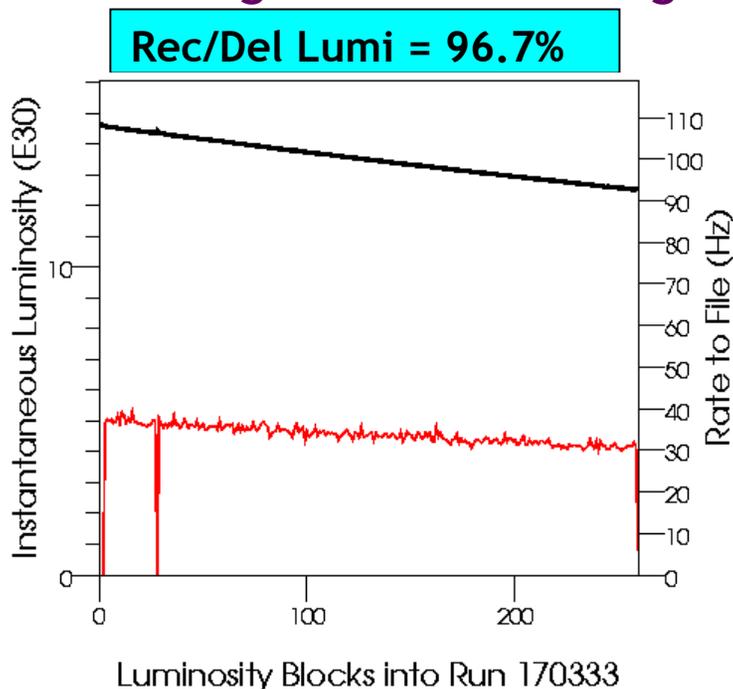
- Most problems above added 50-100% additional losses due to run pauses, readout crate front-end busies, L2/L3 disables, SCL inits, etc.
 - L2 CAL solved by power cycling crate
 - L1 Muon LV PS will be repaired or replaced during shutdown
 - Tracking Triggers - procedural error
- ~0.5 hr: 30 Run transitions (~1 minute/per)
- ~1.0 hr: 9 Begin or End Store transitions (~5 minutes/per)
- ~1-2 hrs: Average 2-4% FEB during physics data taking
 - See next slide



Other D0 News

• Muon Readout Crate Stability

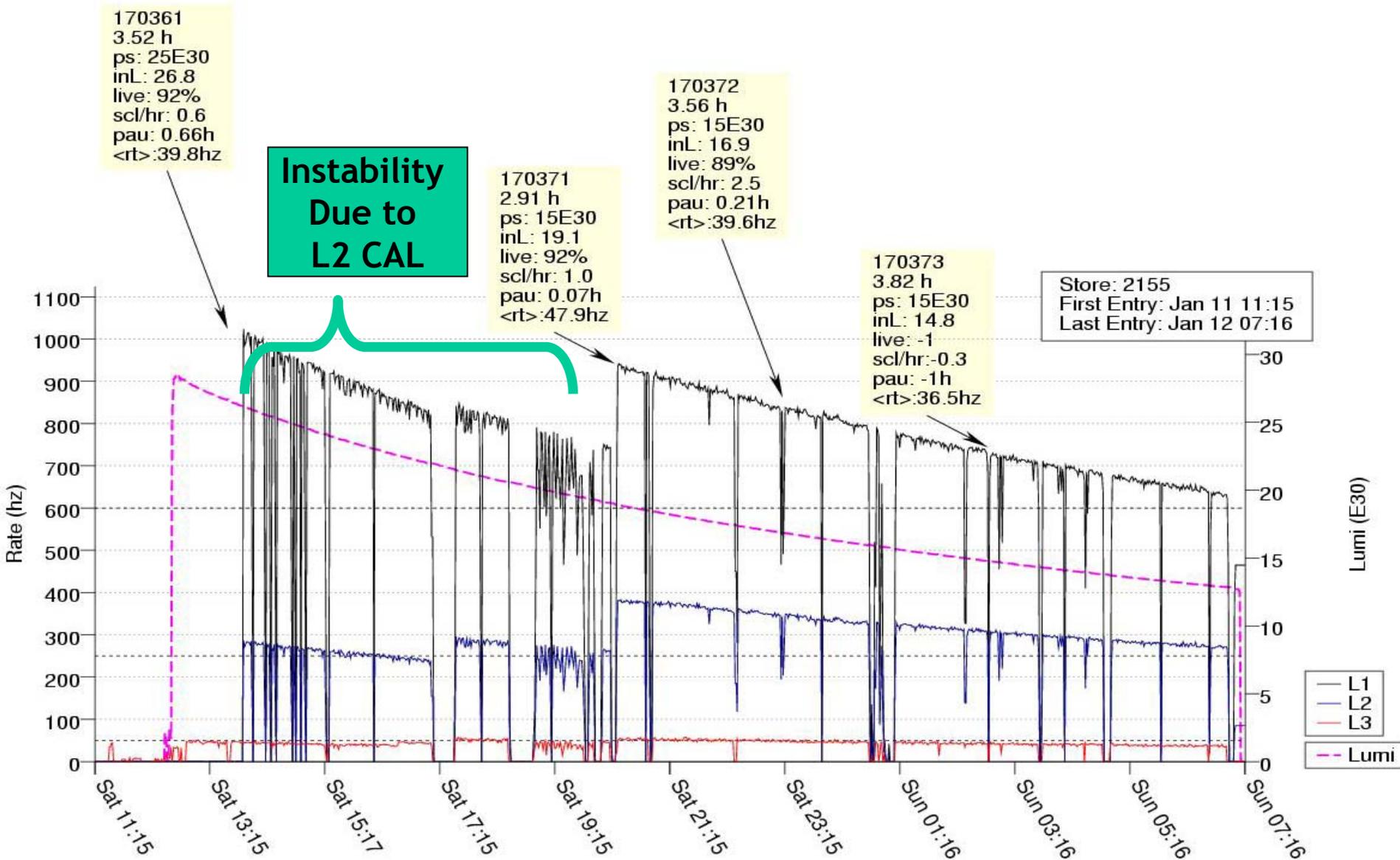
- New version of PDT code
 - Tested during Store 2146 & made default with Store 2153
- We are now running at rates of:
 - L1 ~ 1 kHz & L2 ~ 0.4 kHz
- Running at ~90% for most runs in the last two stores
 - Higher rates incur a greater amount of FEB ~4-5%





L1/L2/L3 Rates

Store 2155 - Sat Jan 11th from 12:45





Shutdown Schedule

January			2003			
Sun	Mon	Tue	Wed	Thu	Fri	Sat
12	13 1:00 LHe JT test 4:00 Surveyors, NEF, SEF, CF 7-7:30 Power outage 7:00 Refrigerator & VLPC warm up starts 8:00 Move shield block from pit door 8:00 Open S B pixel 15:00 Access to South B layer MDT for repairs. Silicon chiller swap. All day - Shut down of Pond Water System All day - T&M pond water filter change	14 7:00 Close S B pixel 11:00 Survey S B pixel 11:00 Open N B pixel erect scaffolding 16:00 Access to North B layer MDT for repairs All day - Pond Water System OFF PM - Pond Water back on All day - T&M pond water filter change	15 7:00 Scaffolding down, Close N B pixel 11:00 Survey N B pixel 13:00 Open EF south 14:30 Open CF east, CF west, prep cathedrals 16:00 Raise SEC cryo platform, pump VJ's 17:00 Access to Cathedrals 17:00 Refrigerator OFF, purifier isolated 16:00 Surveyors, South End Calorimeter All day - T&M pond water filter change	16 AM - Surveyors, finish SEC 7:00 Pump on He Purifier 7:00 Open EF north 9:00 Raise NEC cryo platform, pump VJ's 9:00 Remove TLD's on N & S beam pipe 10:00 Open & Close SEC, Noise testing by D0 Electrical until 14:00. 15:30 SEC gap locked, no access 13:00 - Surveyors, NEC All day-Electricians: Expander All day - T&M pond water filter change	17 7-7:30 Power outage 7:30 Photography in SEC gap until noon. 7:30 Open & Close NEC, Noise testing by D0 Electrical until 11:30. 13:00 Access to south gap 13:00 Photography in NEC gap until 15:30. 16:00 Access to north gap EVMF valve fix MV4013H fix Expander tie in at HX. VLPC test cryostat, insert He u-tubes. All day-Electricians: Expander tie-in.	18
19	20 LAB HOLIDAY Detector in open configuration.	21 9:00 Photography cable bridge outside & in C.H. All day-Welder Expander All day-Electricians: Expnr All day - VLPC test stand Test LHe dewar relief Check fixed cryo valves Install C hole counters? SEC horseshoe shield	22 Cool down purifier P&P helium system. Start Ghe Circulation All day-Electricians: Expander tie-in finish Install C hole counters? Install SEC horseshoe shield	23 Cool down LHe refrigerator Cool down VLPC cryostat Install SEC gap TLD system Install Luminosity monitor purge/sample lines in SEC & NEC gaps	24 Cool down LHe refrigerator Cool down VLPC cryostat Check C.H. cryo valves 7:00 Open & Close SEC, noise testing by D0 Electrical until 13:00.	25 VLPC cryostat cold Solenoid cold
26	27 Install NEC horseshoe shield if south tests ok	28 Install NEC horseshoe shield. Install NEC gap TLD's. Survey closed SEC	29 7:00 Open & Close NEC noise testing until 13:00. Install beam pipe TLD's PM - Survey closed NEC	30 Close CF irons, check A-layer PDT's Close EF irons Extend shielding	31 DETECTOR CLOSED Survey EF's, CF's SEARCH & SECURE	FEB 1 No Access? Controlled Access?
FEB 2 No Access? C.A.?	FEB 3 - Tev Tests None or Controlled Access?	FEB 4 - Tev Tests None or Controlled Access Final Search and Secure	FEB 5 Tev Turn on	FEB 6	FEB 7	FEB 8



Alignment Work Requests

DO will require several alignment tasks during the January, 2003, Tevatron shutdown. **Critical task dates keyed closely to the DO shutdown schedule are shown in red.**

Request #	Date of Work	Task Description(Crew, Technology)	Estimated 8-hr shifts
<i>Detector Configuration: CF Closed, EF's Closed</i>			
4282	<Jan13, 04:00 AM N first	Standard Stick Mike measurements of CF and EF prior to opening of the detector. 2 man crew	1
4283	Jan 14/15	South/North B Pixels after S MDT repairs, before opening S/N EF. Per end: V Star for lower octants 1/2 day Optical survey (north/south coordinate) 1/2 day. 2 man crew each technology	2
4287	Jan 31	Standard Stick Mike measurements of CF and EF after detector is closed. 2 man crew	1
<i>Detector Configuration: CF open, EF's open, EC's closed</i>			
4284	Jan 15 16:00 Jan 16	Survey EC's with VSTAR. 1 day per EC, before EC's are opened. 2 man crew	2
4286	Jan 28 16:00 Jan 29	Survey EC's with VSTAR. 1 day per EC, after EC's are closed at end of shutdown. 2 man crew	2
<i>Detector Configuration: Immaterial</i>			
4285	Jan 20— Jan 31	Survey A2U Arm of 1 FPD Castle, Tevatron tunnel, Pbar side 2 man crew	2
4297	Jan 13— Jan 31	Perform Check Surveys as possible on balance of FPD's 2 man crew	2
4298	Jan 13--Jan 31	Make Elevation Run of Selected Collision Hall Tierods, sidewalk monuments 2 man crew	1

**Did Rad Survey on
Sun Jan 12 at 13:00**

**Survey crews arrived
at 08:00 Mon Jan 13
& finished first work
by lunch**



Sub-Systems Part I

Repairs, Upgrades, Maintenance

- **Silicon**
 - Fix ~5% of problematic channels
 - Replace some low reliability boards
 - Upgrades of firmware and software
 - Retrieval of TLD badges and installation of new ones
- **Fiber Tracker & Pre-Shower**
 - Warm up of cryostat
 - Move of some VLPC cassettes
 - Work on CTT electronics
 - FPS fiber bundles moves
 - Firmware upgrade
- **Calorimeter**
 - Modifications to 1500 BLS cards (reduction of trigger noises by factor of ~2)
 - Pre-amp fans replacements
 - Finishing L1CAL full rapidity coverage
- **Inter Cryostat Detector**
 - Radiation source test of North EC to check mapping & insure all tiles and cables are working
 - Replace ~10% of dead or marginal PMTs (from Run I) with new tubes (same model)
 - Swap out ~3% of faulty electronics



Sub-Systems Part II

Repairs, Upgrades, Maintenance

- **Luminosity**
 - Purge gas for PMTs (against He)
- **Muon**
 - Fix broken wires in MDTs
 - Replace failed PMTs/bases in trigger counters
 - Upgrades to PDT firmware and software
- **L1 Muon**
 - Repair power supplies
 - Fix to ~5% cables from CTT
- **Forward Proton Detector**
 - Repairs to pots in the tunnel
 - Connection of detectors to D0 AFEs and DAQ
- **L2**
 - Upgrade (no lock step mode)
- **Upgrades and repairs to the online cluster**
- **Lot of infrastructure work**
 - New air filters
 - New power supplies
 - New pond water filters

Progress report will be given next week...