



# D0 Status Report

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FNAL

All Experimenters' Meeting

29 January 2007



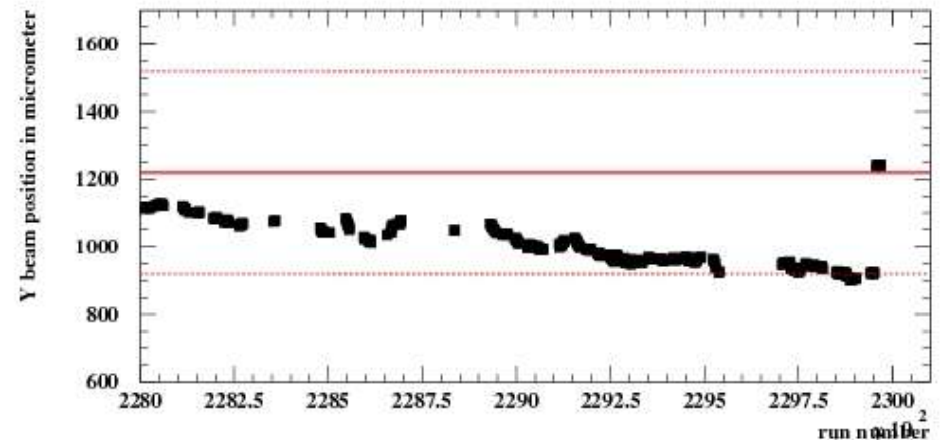
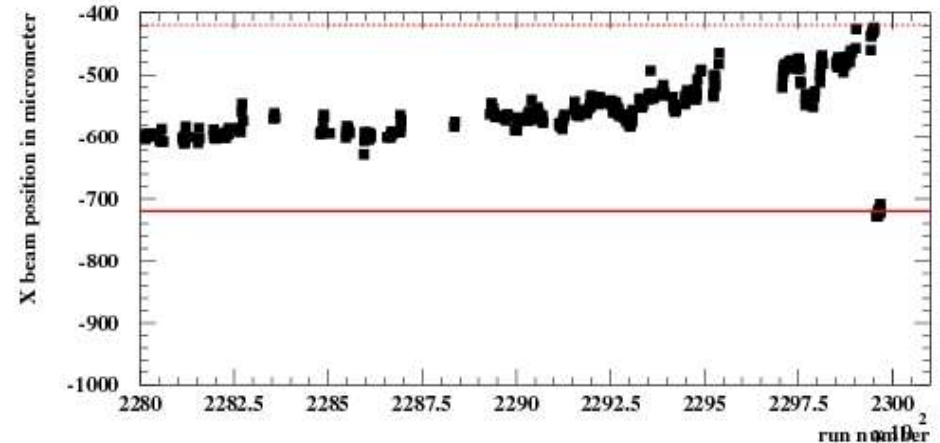
# Data Taking

Day	Delivered Lum (pb <sup>-1</sup> )	Recorded Lum (pb <sup>-1</sup> )	Efficiency (%)	Comment
22 Jan	0.43	0.37	86	
23 Jan	6.40	5.41	84	20 min at start of store Silicon HV issue 35 min for Online node crash / Admin error
24 Jan	7.92	7.19	91	AD adjusted beam spot. Record Daily Delivered and Recorded Luminosity.
25 Jan	1.00	0.97	97	11 hour controlled access.
26 Jan	5.46	4.37	80	75 min down for L2CAL / Operator Error
27 Jan	4.42	4.17	94	
28 Jan	4.25	3.65	86	15 min at start of store for muon HV/controls problem.
22-28 Jan	29.9	26.1	87	



# Beam Spot

- Over the past couple of months the D0 beam spot drifted to the edge of our trigger acceptance.
  - On Wednesday, 24 January, the AD made an adjustment to the beam spot.
  - The beam spot was brought back to our nominal position of  $(x,y) = (-720, 1220)$ .
  - Our thanks go out to the AD for bringing the beam spot back to the center of our trigger acceptance.



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# Access

- On Monday, 22 January, D0 had a 30 minute access to repair a C-layer PDT.
- On Thursday, 25 January, D0 had an 11 hour access.
  - The A-layer Muon PDT system had become degraded such that D0 only had 77% of nominal coverage.
  - Since repairs would require opening the detector, D0 requested a long access.
  - Five PDT's were repaired.
    - In addition, two Cal preamp power supplies were repaired as well as minor work on the fiber tracker, calorimeter, and central track trigger.
- We thank the AD for the opportunity to repair this vital portion of the D0 detector.



# Reconstructing the Data

- Once the D0 data is written to tape, there is a 24 to 36 hour delay prior to offline event reconstruction to ensure that all calibration constants are available.
  - Local farms process the data within the next 3 to 5 days
  - Typically, processed data available less than six days after recording
  - On occasion, some data is deemed high priority
    - In these cases, the data is often processed in less than two days
- Local farms are fully capable of keeping up with the current input load
  - For Run I Ib,
    - 491M events recorded through Dec 31
    - 426M events processed through various p20 versions of RECO
    - Reconstruction of the remaining 13% deferred in anticipation of availability of improved reconstruction code
  - Additional farm nodes are expected within the next month in anticipation of even higher luminosities



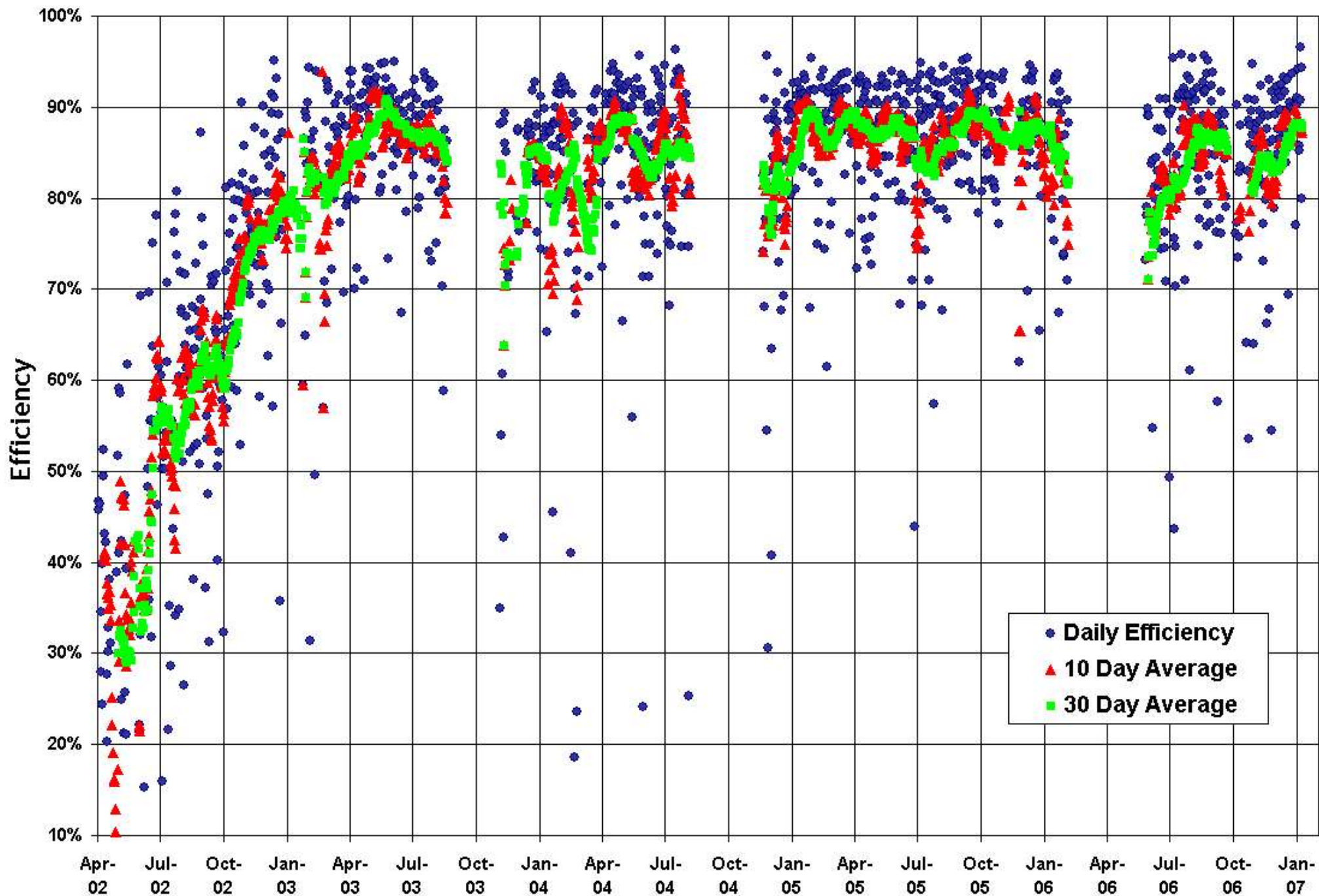
# Improved Reconstruction

- D0 has been developing an improved version of the reconstruction code for Run IIb data
  - Updated calorimeter calibration for EM and HAD sections (as well as the ICD)
  - Improved tracker alignment
  - Optimized tracker thresholds
  - Improved robustness
  - Many other features
  - This version began running on new data on the local farms last week
- While output from the previous version of RECO will be used for the next round of results, D0 plans to take full advantage of the above improvements, so we will re-reconstruct the accumulated RunIIb data sample
  - Re-processing to be performed on remote farms
  - This process is expected to take several months



# Daily Data Taking Efficiency

19 April 2002 - 27 January 2007





# Run II Integrated Luminosity

19 April 2002 - 27 January 2007

