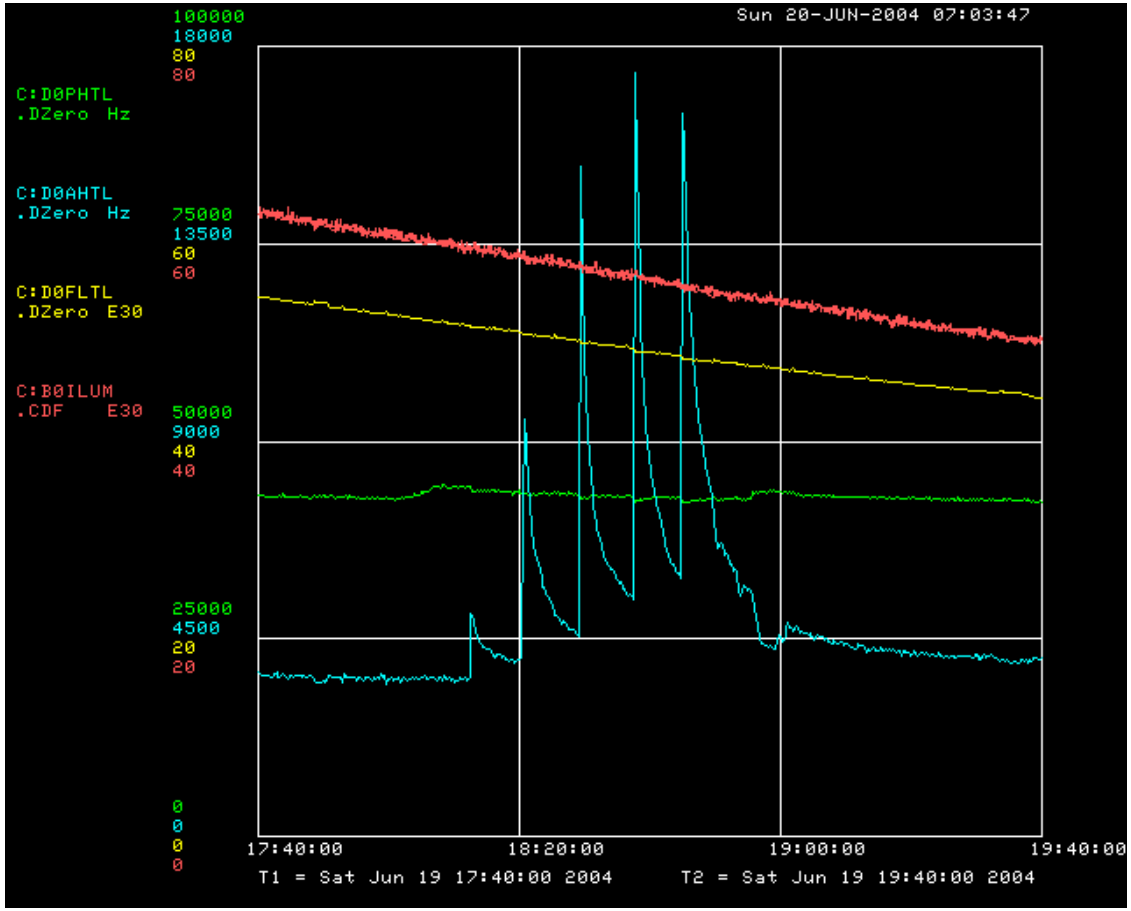
Data Taking

- Last week: Monday June 7rd – Sunday June 13th:
  - **Delivered 11676nb^{-1} Recorded 9849nb^{-1} Efficiency 84.4%**
- This week: Monday June 14th – Sunday June 20th:
  - **Delivered 11433nb^{-1} Recorded 9188nb^{-1} Efficiency 80.4%**

Day		$\int L\,dt$ (del)	$\int L\,dt$ (rec)	Efficiency
Mon	Jun 14	1891nb^{-1}	1738nb^{-1}	91.9%
Tue	Jun 15	1426nb^{-1}	1300nb^{-1}	91.2%
Wed	Jun 16	2404nb^{-1}	1714nb^{-1}	71.3%
Thu	Jun 17	251nb^{-1}	61nb^{-1}	24.2%
Fri	Jun 18	2140nb^{-1}	1668nb^{-1}	77.9%
Sat	Jun 19	1923nb^{-1}	1659nb^{-1}	86.3%
Sun	Jun 20	1398nb^{-1}	1047nb^{-1}	74.9%

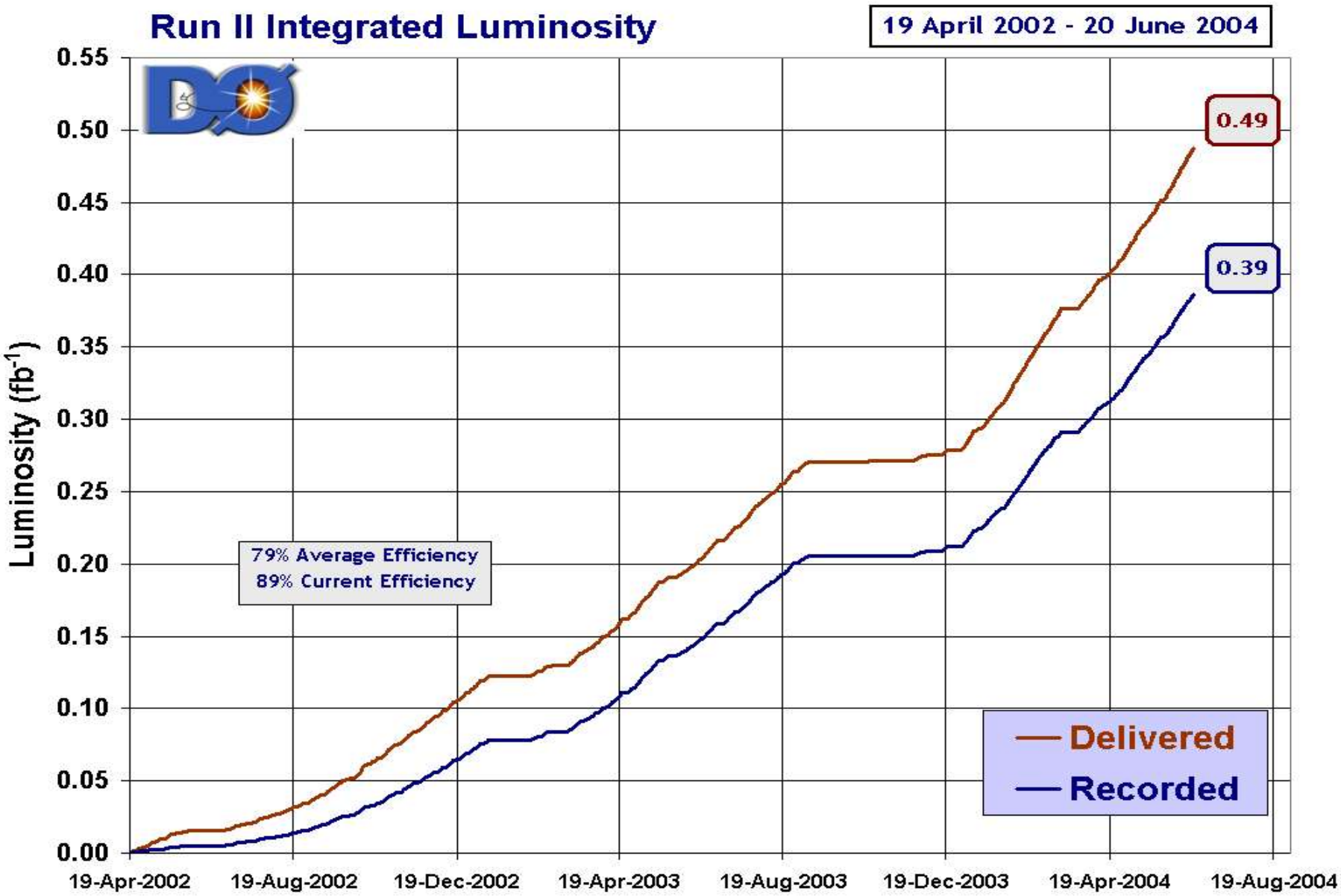
Inefficiencies

- Recently re-enabled ~20 potentially “unstable” Silicon HDI's – occasional problems
- “Rescraping”
  - About every second store re-scraped 15-30min into the store – little chance to evaluate data quality
  - With one exception (Sat eve store 3584) losses were good at all times
- Wed/Thu – failed Calorimeter LV power supply (→ later)
- Friday – special runs for trigger improvements



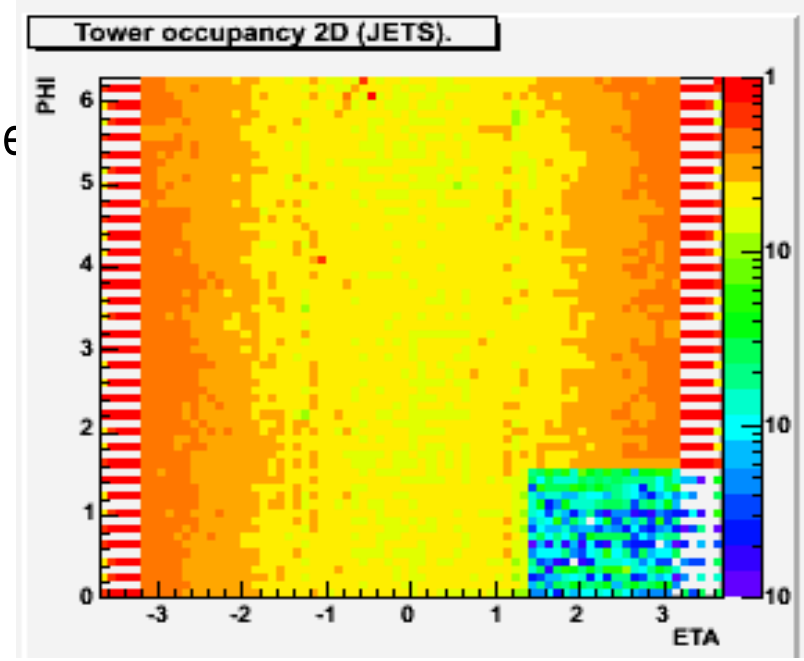
- Unstable L2 input from forward muon system since Friday
- Four hours lost on Saturday to Level 3 / DAQ problems

Integrated Luminosity



Calorimeter LV PS

- Secondary Calorimeter LV PS failed Wednesday morning around 9am
  - Primary had failed ~2 days before
  - Arranged access for following morning once we knew it was inevitable
- Made good use of the time with compromised detector to collect special runs
  - SMT bias voltage scans (measure depletion voltage
  - Rate/data integrity tests with new PDT r/o code
  - Performance tests of MDT readout
  - Forward Muon trigger efficiency study
- Access Thursday 5:30-16:00
  - Open east CF to gain access to cathedral
  - Repaired both PS
  - Also installed new firmware in two SMT crates (FEB studies), worked on CFT AFE's, MDT FE's, BLS PS, PDT's, ..., and fixed potential Helium leaks in the hall



Improvement in β^*_x

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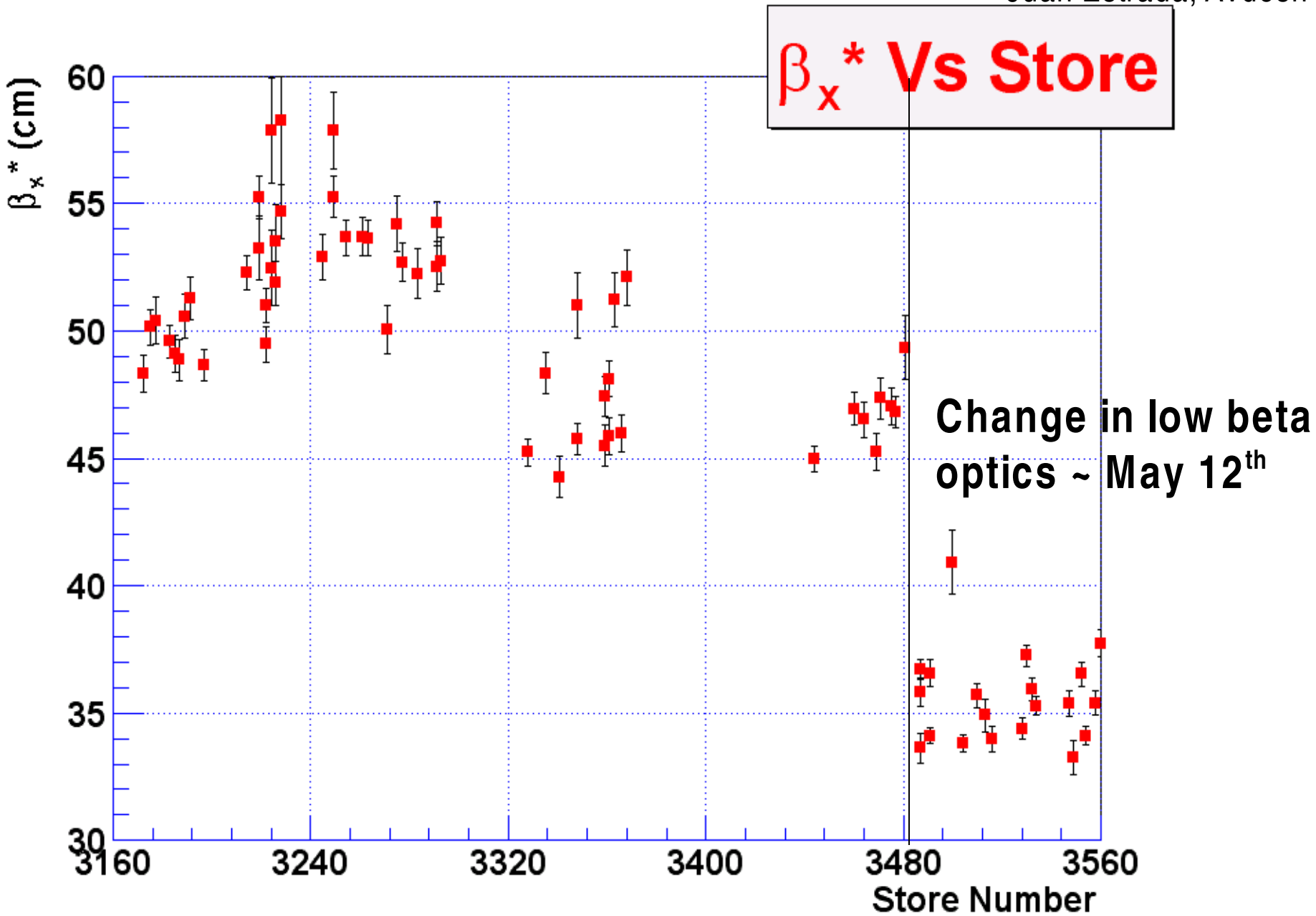

Improvement in β^*_y

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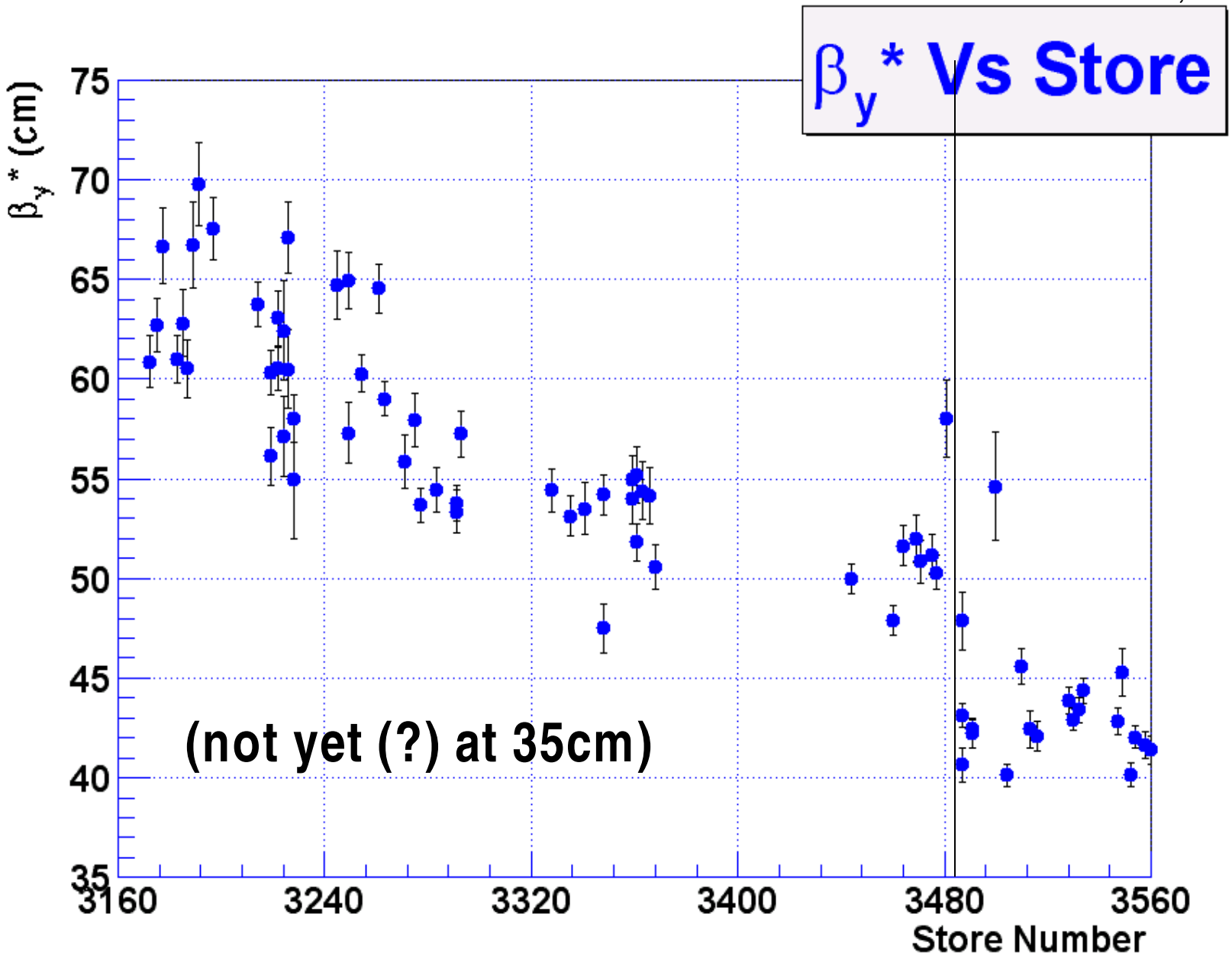
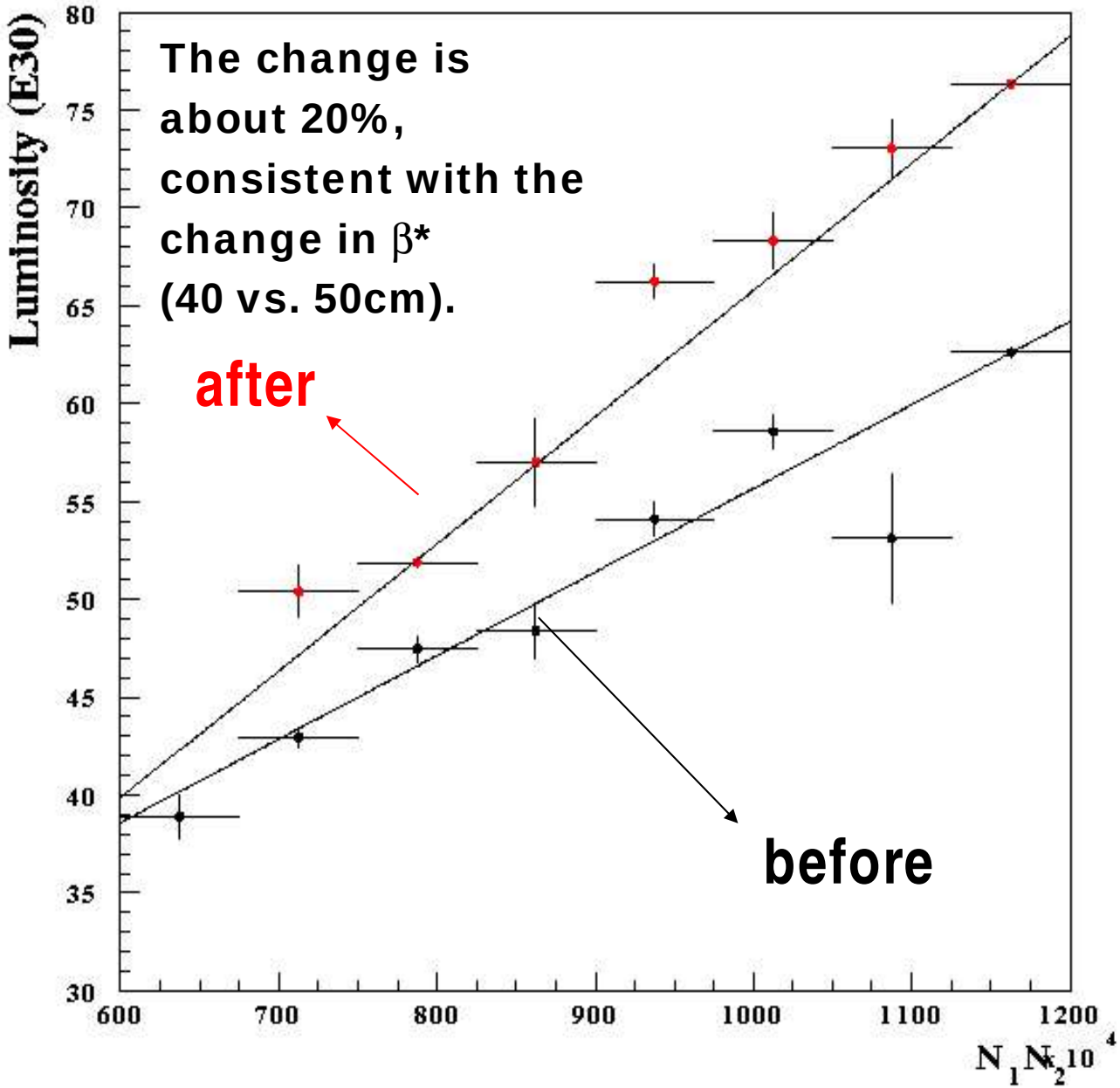


Luminosity Increase



With the new optics, the luminosity when up. That means, that for the same number p and pbar, we get higher luminosities.

This was the ultimate test for our beam shape measurements at DØ. We can really measure a change in the optics, and the luminosity goes up when we see an improvement in the beam.

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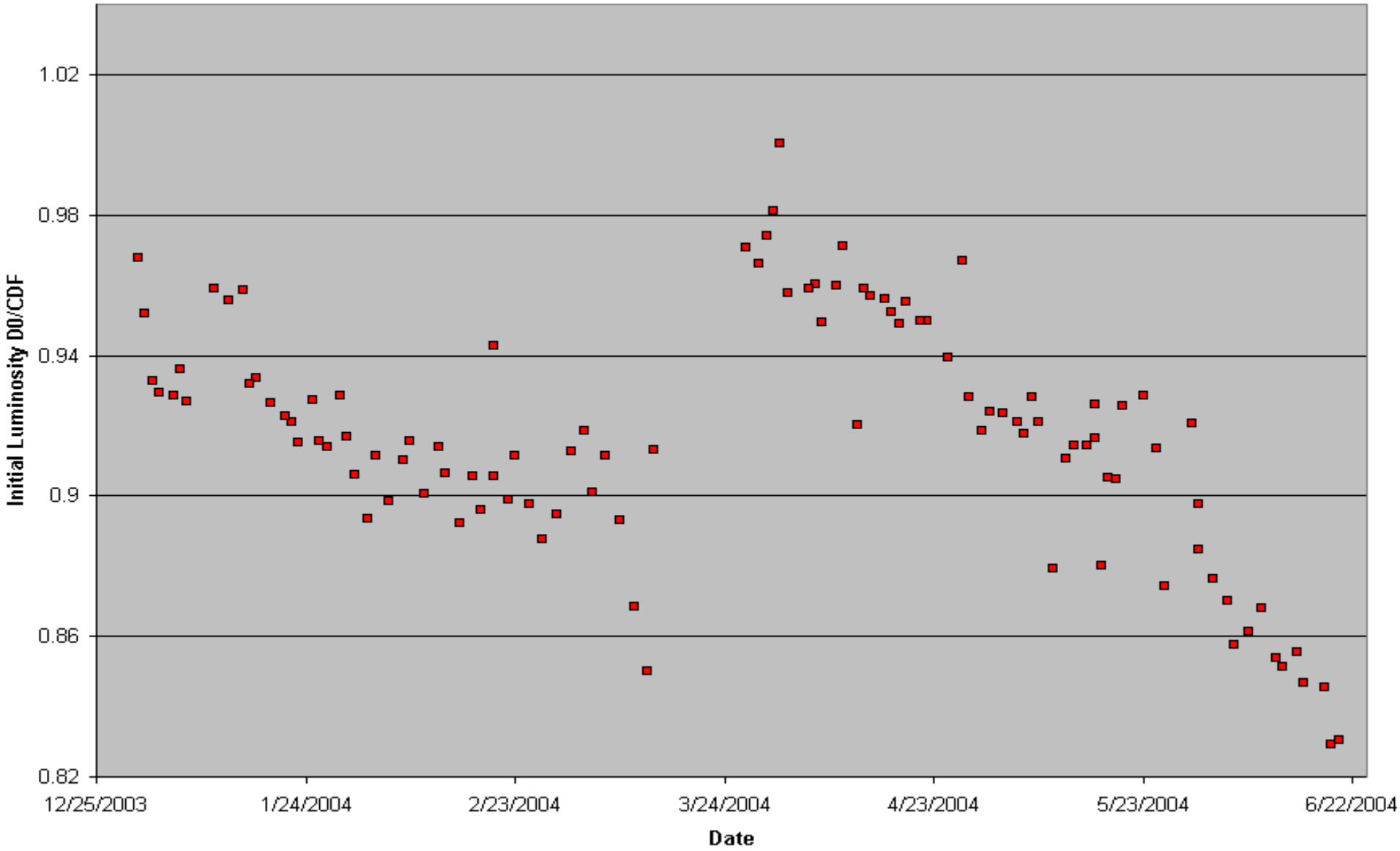
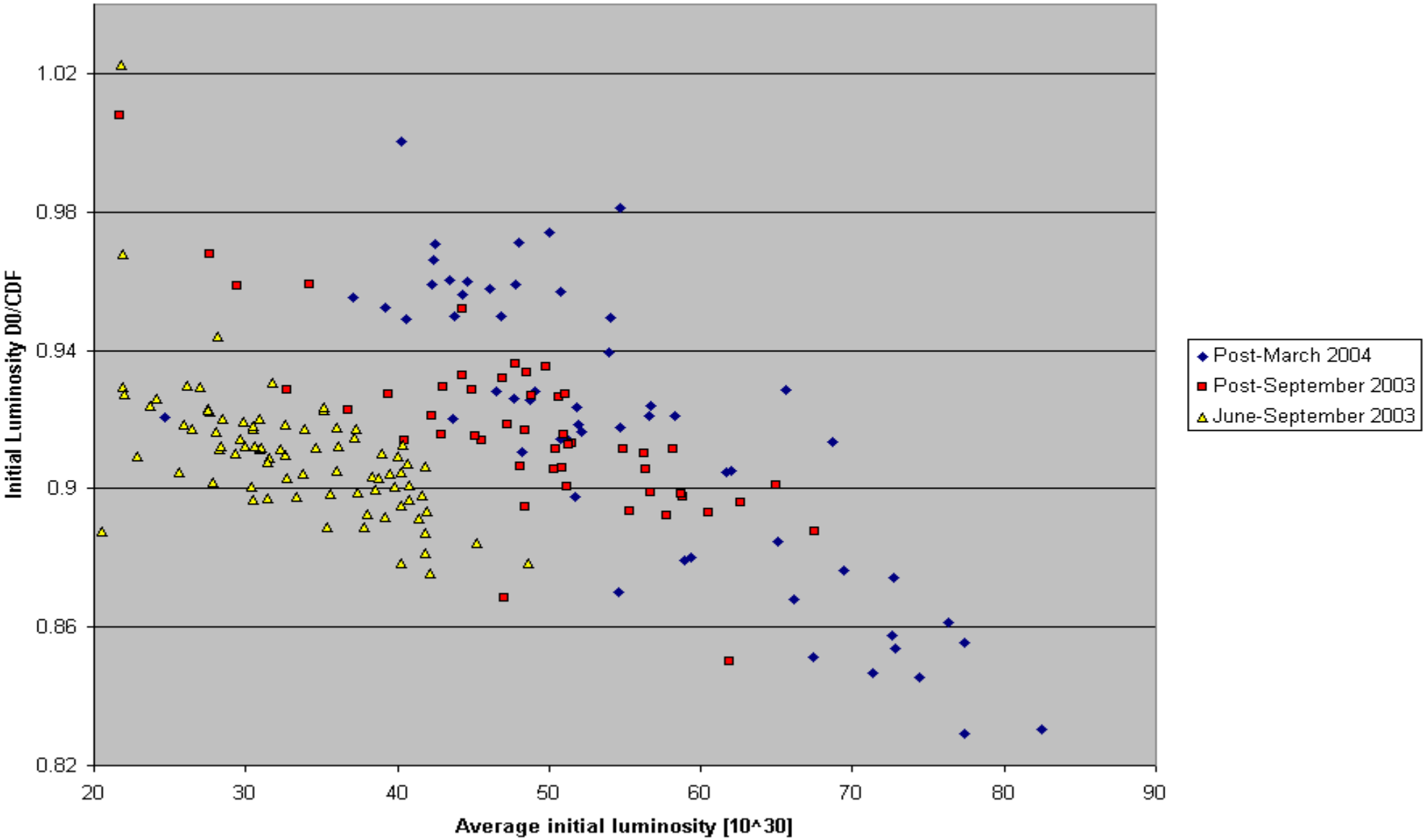
Luminosity Ratio DØ/CDF



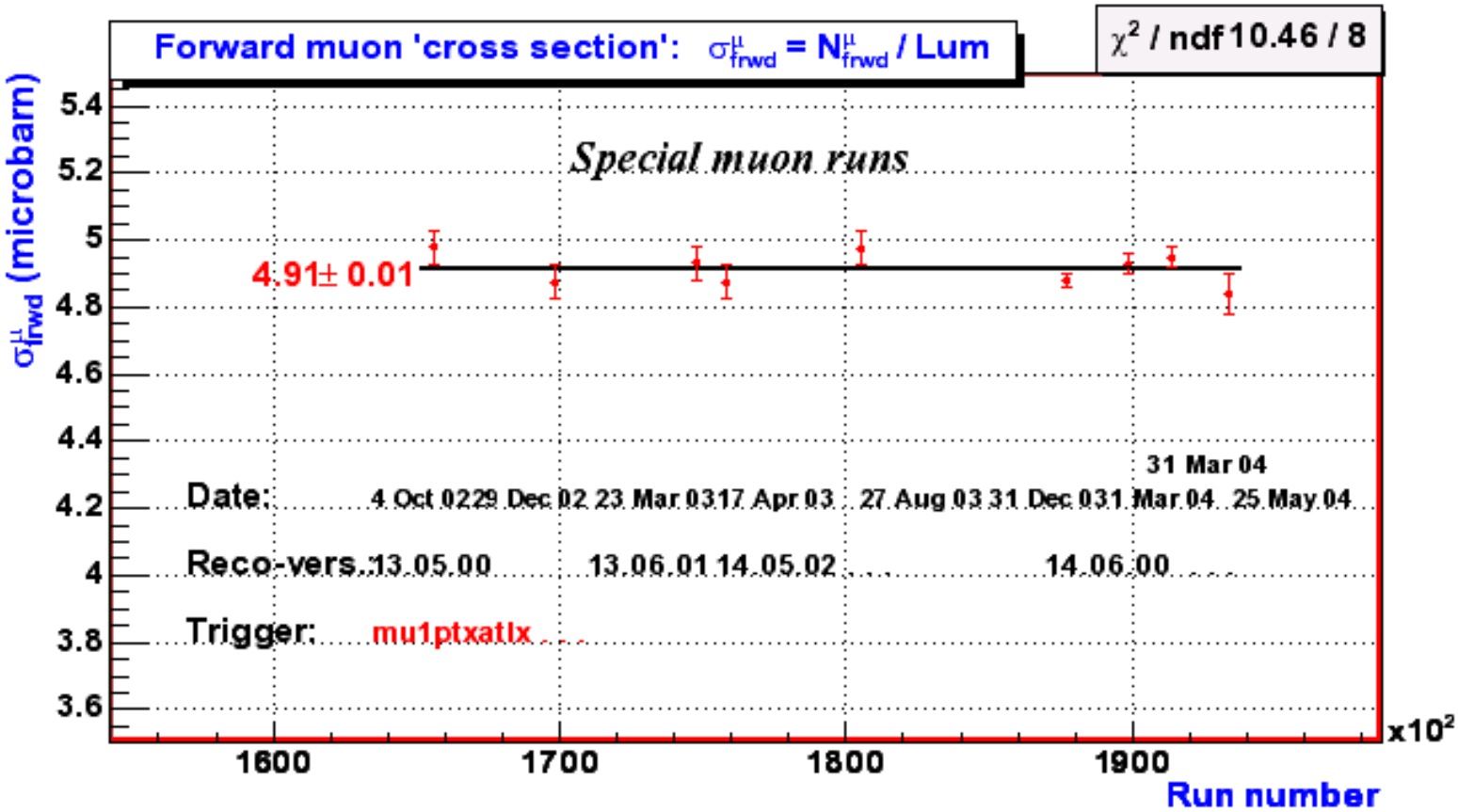
Luminosity Ratio DØ/CDF



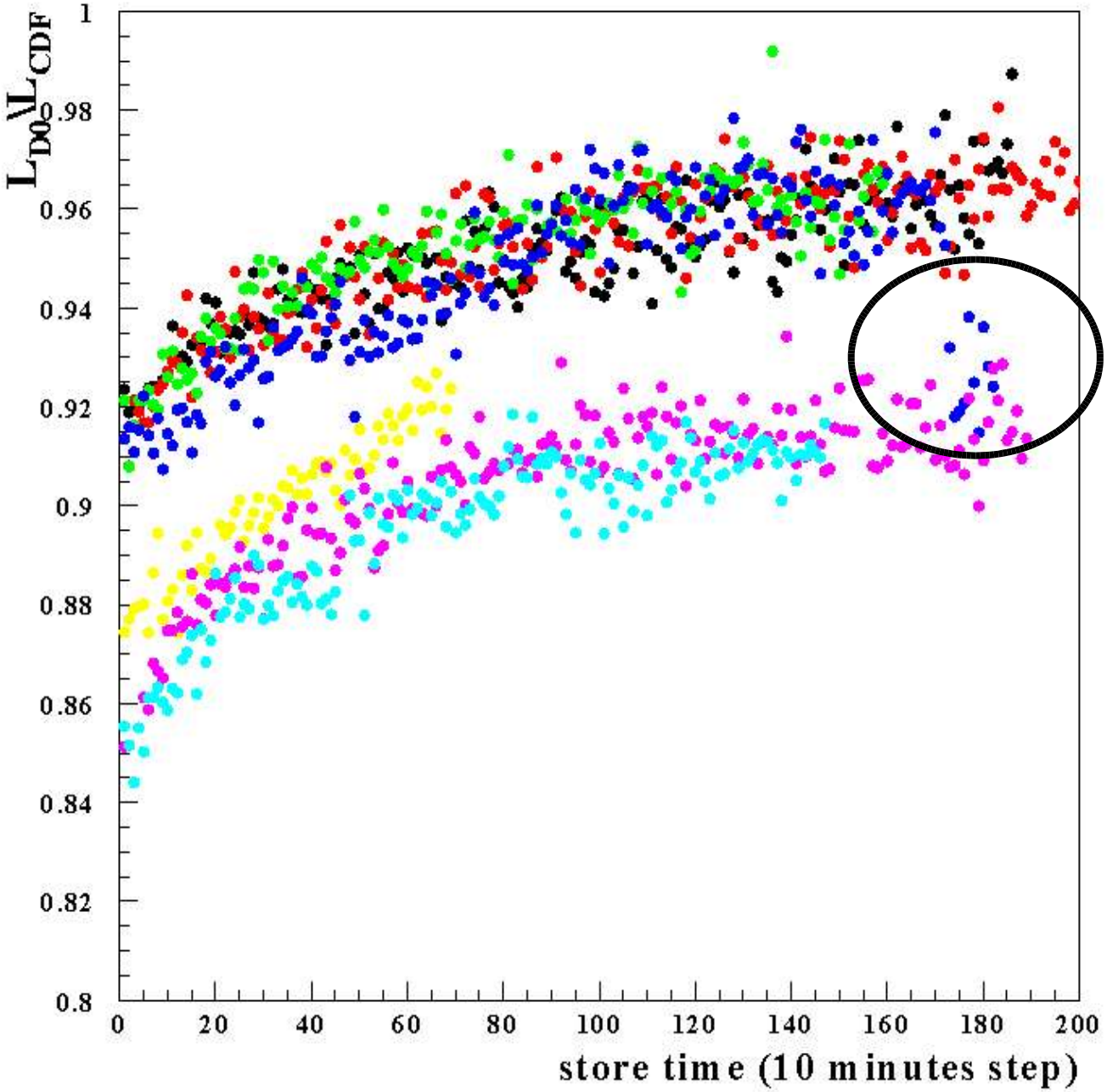
Inclusive Muon Cross Sections

Dmitri Denisov et al.

- **Check of the luminosity measurement**
- Provides reliable monitoring on a better than 1% level
- Will take additional runs to confirm at high luminosity



During a Store



At the end of the store the luminosity ratio is closer to 1. Independent of the initial luminosity.

Store	luminosity (E30)
3464	50
3469	56
3477	54
3532	65 (last z offset)
3534	68
3571	62
3574	71

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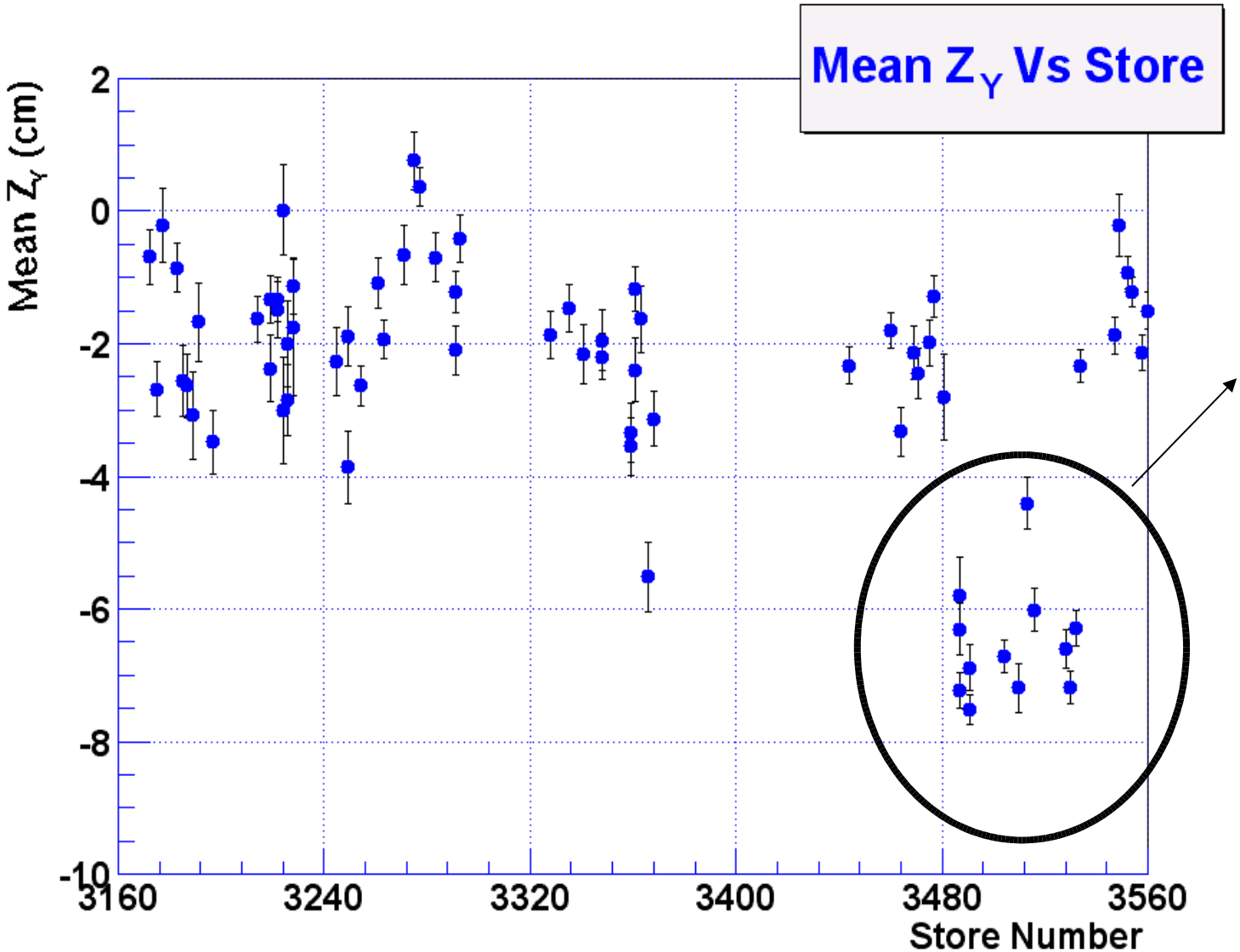
Alpha Bumps



After the optics change, centre of luminous region was shifted in z. At the time this was corrected, apparently B0 luminosity increased.

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Summary

- Recorded 9.2pb^{-1} and 16.0 x 10^{6} events for the week
- Lower efficiency (80%) than usual
  - Calorimeter LV power supply failure
  - Level 3 / DAQ problem
- Concerns about D0 luminous region
  - Much better than in the past, but not at design values
  - Peak luminosity ratio D0/CDF continues to deteriorate
  - Luminosity at D0 at low luminosity also worse than before compared to CDF