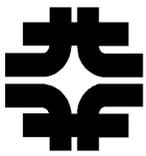


Week in Review: 08/18/03 – 08/25/03

Doug Moehs – FNAL

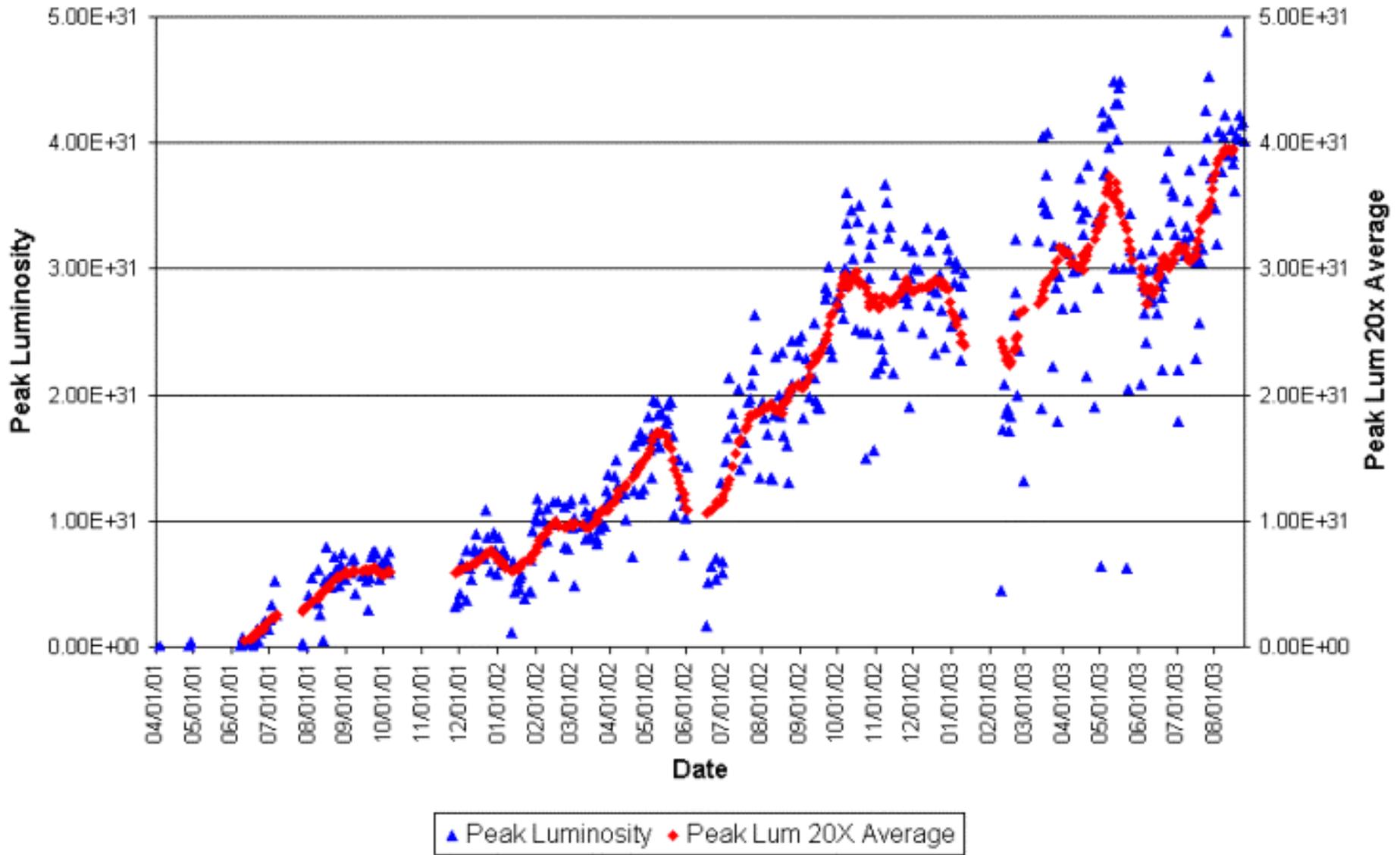
Officially reached **225 pb⁻¹** for fiscal year 2003 on
Friday just before 7:00 during store 2934!!

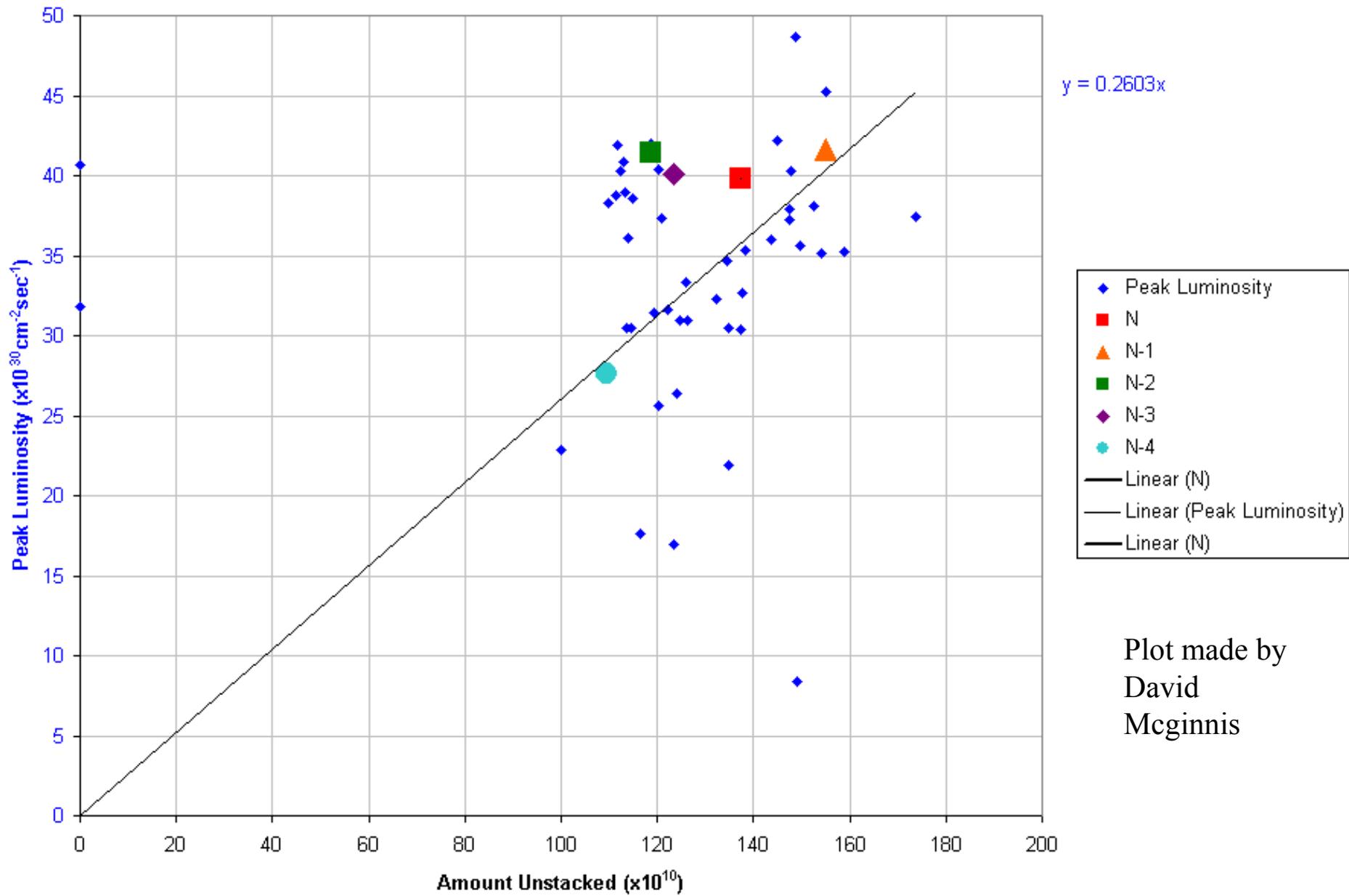


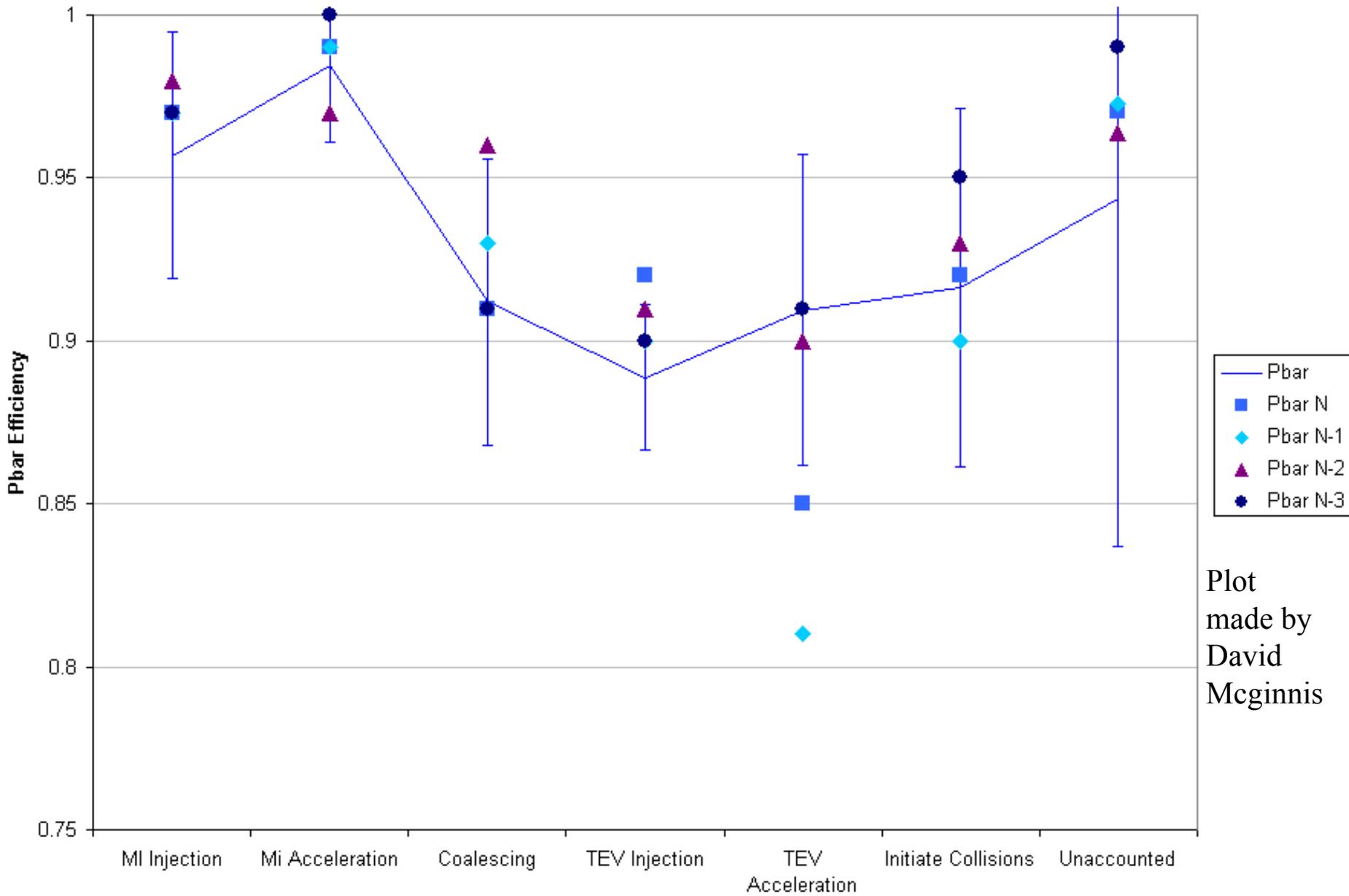
Stores Summary

Store	Initial Lum. (E30)	Deliv'd Lum. (nb ⁻¹)	Termination	Time (hr)	Stack/Unstack (mA)	Comments
2923	40.5	581	Quench	5.2	140/120	KAMAC Power Supply
2928	42.2	65	Quench	0.5	137/110	Separator spark
2932	27.6	983	Intentional	18.6	120	L. Damper on/ new limiter 54% Pbar eff. to HEP M:Q205 off, emit. Growth
2934	40.0	1665	Intentional	23	134/123	Lost RF3 during store Reached 225 pb⁻¹
2937	41.4	1528	Intentional	19	130/118	Delayed due to lost stack Power glitch
2939	41.7	1531	Intentional	18.2	169/154	56.7% to HEP, losses up ramp
2941	40.0	934	Quench	10.5	150/137	Power glitch

Collider Run IIA Peak Luminosity





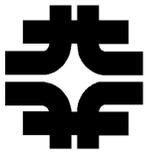


Plot
made by
David
McGinnis



TeV Studies and Changes

- Looking for the cause of losses
 - Parsed the squeeze with coalesced beam (12x0) to look at B11 losses
 - Losses may be associated with beam-beam effects?
- Longitudinal Dampers turned back on and tested with 12x0
 - A new phase limiter was installed in the high level RF
- Adjusting the MI flattop energy on Pbar cycles
 - Energy change in steps of 10 MeV on 2A's
 - 20 MeV reduction made so far, started on store 2934
- Preparation of a new helix using more separators up the ramp.
 - Looked at aperture at A0 on both helixes
 - 36x4 will be attempted again this week
- Lattice measurements
 - Optics measurements and corrections



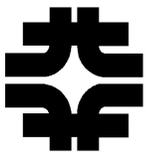
Machine Updates

- Proton Source
 - We have 2 spares 7835 tubes but we still owe 2 tubes to BNL and 1 to Argonne
- Recycler
 - Longitudinal emittance evolution with MI Ramp correction
 - MI Ramp deflections of 0.25 mm Horizontal and 0.1 mm Vertical observed
- Main Injector
 - Slip stacking
 - Beam loading and transition losses
 - NUMI multi-batch acceleration
 - Without Booster cogging: limit number of study pulses
 - 2.5MHz acceleration
 - Tune and orbit measurements
- Antiproton Source
 - New scheme: limit the number of bunches extracted by longitudinal emittance
 - Prevents unstacking more bunches than the MI can reasonably coalesce



This Weeks Focus: Studies

- Commission new Helix 36x4 and hopefully 36x36
 - Possible destructive in that there could be a quench
- Access into all tunnels on Thursday for 8 hours
- Dedicated studies:
 - Pbar
 - Main Injector
 - Recycler
 - Booster (during the Thursday shutdown)
- Stack and Store through Labor Day weekend
- MI and SY120 Semi-parasitic studies
 - 10% of time line, 20% after stack reaches 120 mA



Brief Summary

Since Wednesday we have had several long stores

- Lifted administrative control on unstacking 110 mA
 - Originally applied due to short stores
- All average initial luminosities $> 40e30\text{cm}^{-2}\text{s}^{-1}$ with the exception of store 2932.
- $\gg 70$ store hours
- Focus for this week
 1. Helix commissioning
 2. 8 hour access
 3. Integrate luminosity were possible: the schedule will flex to accommodate studies.