



Recovering from Shutdown

Ron Moore – FNAL

- Machine status
- Plan for the Week



Proton Source

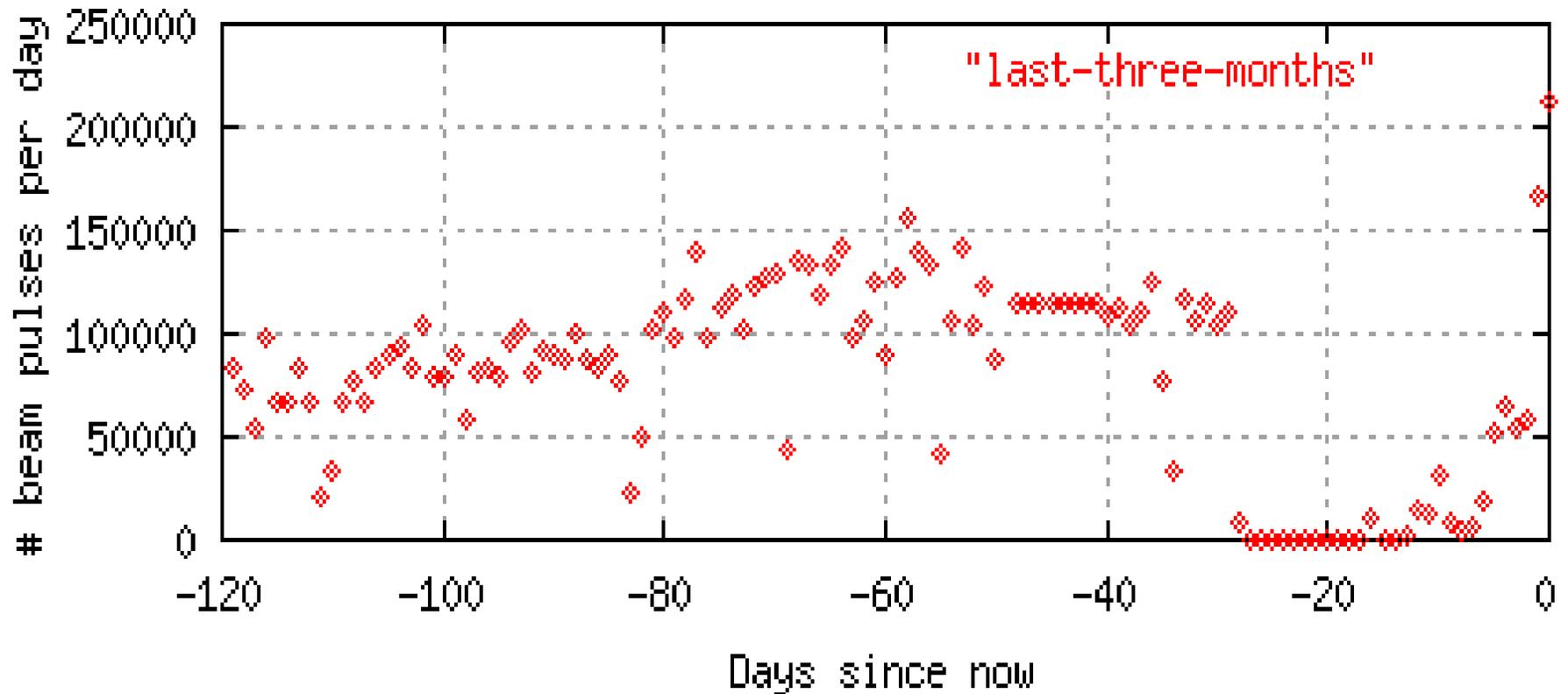
- Linac
 - Record 210,000 beam pulses on Saturday (avg ~ 2.4 Hz)
 - Previous best was 160,000

- Booster
 - Tried high rate MiniBoone running (no stacking)
 - Achieved 4 Hz @ 5 turns \Rightarrow 2.9 E16 protons/hr
 - Needed to bypass limit of a single loss monitor
 - Limited by ORBMP temperature, rate limit
 - W/o stacking, 3.4 Hz @ 5 turns \Rightarrow 2.4 E16 protons/hr
 - Will retune for higher intensities this week



Weekly Linac Beam Pulse Count

Updated at Mon Feb 10 01:04:01 CST 2003





Pbar

- Reestablished good production, stacking
- Pilot shots to MI on Friday very useful
 - Fixed Pbar-MI phasing
 - First pass at tweaking ARF4 cavity (used to unstack) after modifications during shutdown (higher impedance)
- Have not yet had $> 3.9 \text{ E}12$ prot/pulse on target
 - Want to reach $4.5 \text{ E} 12$
 - Waiting for Booster tune-up
- Emphasis will be on increasing stack rate



Main Injector & Recycler

- Main Injector
 - OK, supporting rest of complex
 - Need more pbar shots to resolve a kicker problem?
 - Tuning 106 MHz cavity on pbar shots to improve coalescing
 - Need additional minor tuning of MI-8, P1, A1 transfer lines
- Recycler
 - Resolved problems with some beam valves
 - Vertical flying wire has bad bearing, need another access to repair
 - Circulating protons, ready to check out machine
 - Aperture scans, beam lifetime (vacuum) measurements
 - Ready for pbars next week?

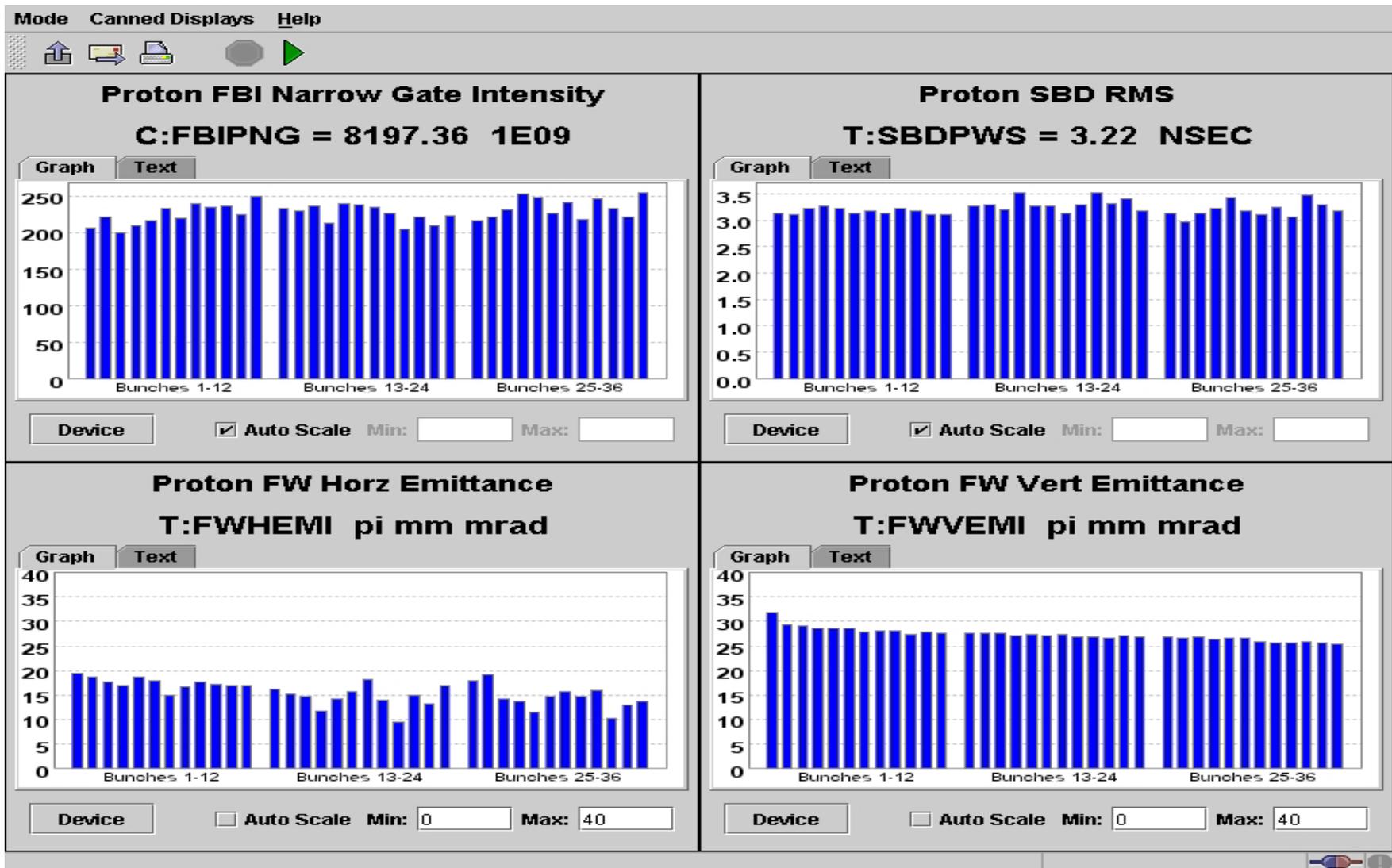


Tevatron

- C34-2 dipole replaced, no problems turning on
- Post-shutdown commissioning with beam began Saturday
 - Recommissioning progressed very well
 - All the basics done – orbits, tunes, coupling on ramp and squeeze
- Aperture scans done – no surprises
 - C0 vertical aperture 2× larger than before shutdown (now 20 mm)
- Poor beam tube vacuum @ F14
 - In 10^{-7} torr range, should be $\sim 10^{-9}$ torr
 - Need 4 hr access to investigate
- Ready for a 36 x N test store today
 - No guarantees, but take the pilot pbar shots to collisions
 - Identify any lingering problems with shots, CDF / D0
 - Look at losses caused by poor vacuum @ F14 (recall outgassing ferrites @ F11 last spring)



36 coalesced proton bunches in Tev





Summary

- Tevatron C34 dipole replacement completed
- Tev turn-on and commissioning went very well
- Tested high rate Booster/MiniBoone running (no stacking)
 - Reached 5 turns @ 4 Hz (2.9 E 16 protons/hr)
- Linac had record 210,000 beam pulses on Saturday
- Complex approaching normal operation again
 - Try making collisions in Tev today as exercise
 - Stack & store rest of the week
 - Begin dedicated studies after some stable running