

Week in Review: 11/25/02 – 12/1/02

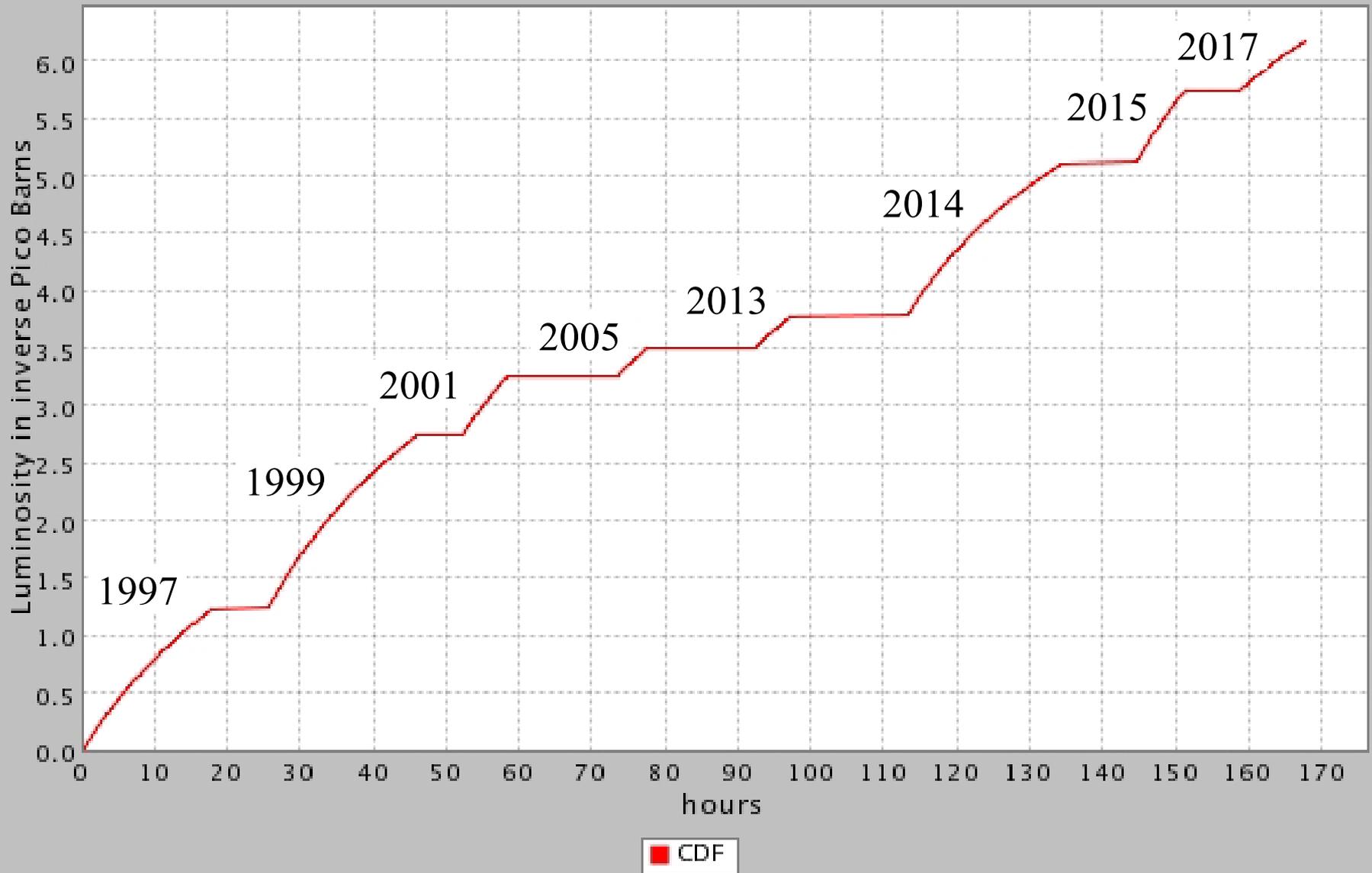
Ron Moore – FNAL

- Stack and Store week
- Emittance Blow-up on ramp
- Abort Kicker Prefires

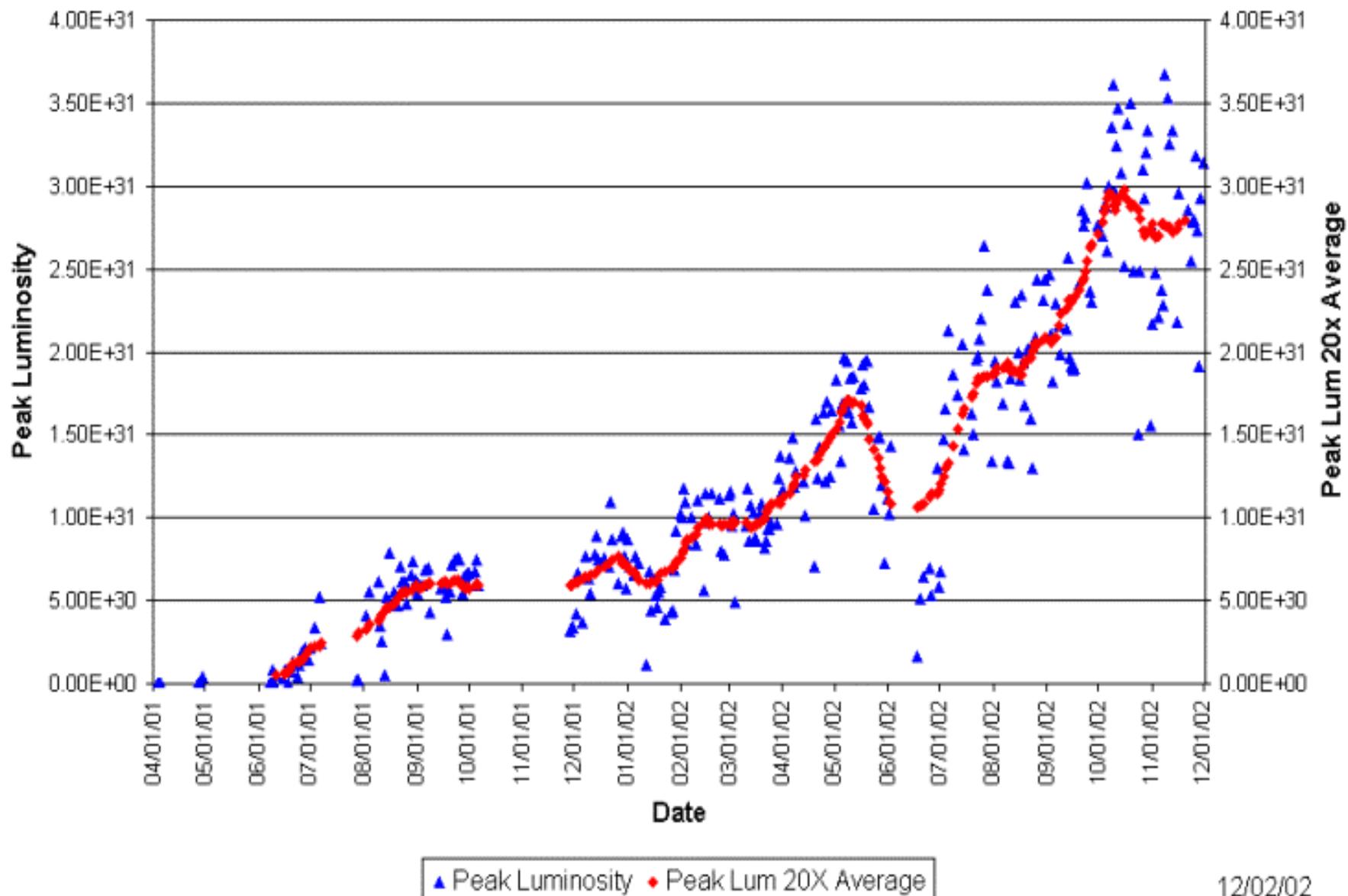
Store Summary

Store	Initial Lumi	Deliv'd Lumi	Termination	Comments
1997	27.8	1248	Intentional	Lost 1 pbar xfer; lower chromaticity on ramp
1999	31.8	1501	Quench	Lowering chromaticity in end-of-store study
2001	27.1	525	power glitch	Raise chromaticity up ramp to 11/12 values
2005	18.9	250	AAK3 prefire	Reverted to 11/2 A1 line settings Dampers off up ramp
2013	17.2	271	A2 CC stalled	Tev pbar closure failed; separator spark
2014	29.3	1334	Intentional	Dampers still off up ramp
2015	31.3	651	power glitch	Raise vert tune +0.002 180-800 GeV
2017	15.9	660	Intentional	Retreat on tune, chrom mods; dampers on Pbar blow-up in squeeze

Int. Luminosity: \square Nov-25-2002 to Dec-02-2002

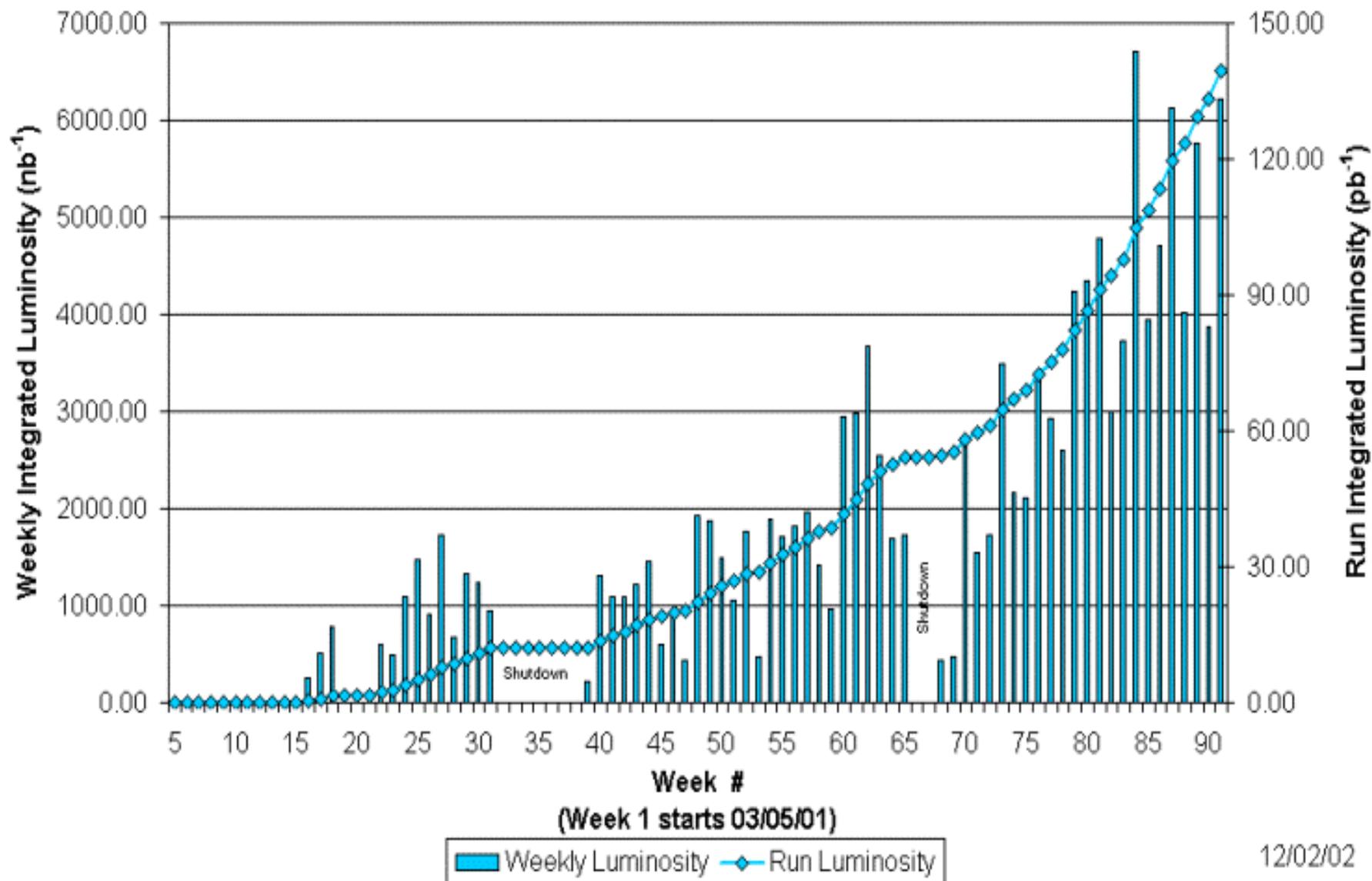


Collider Run IIA Peak Luminosity

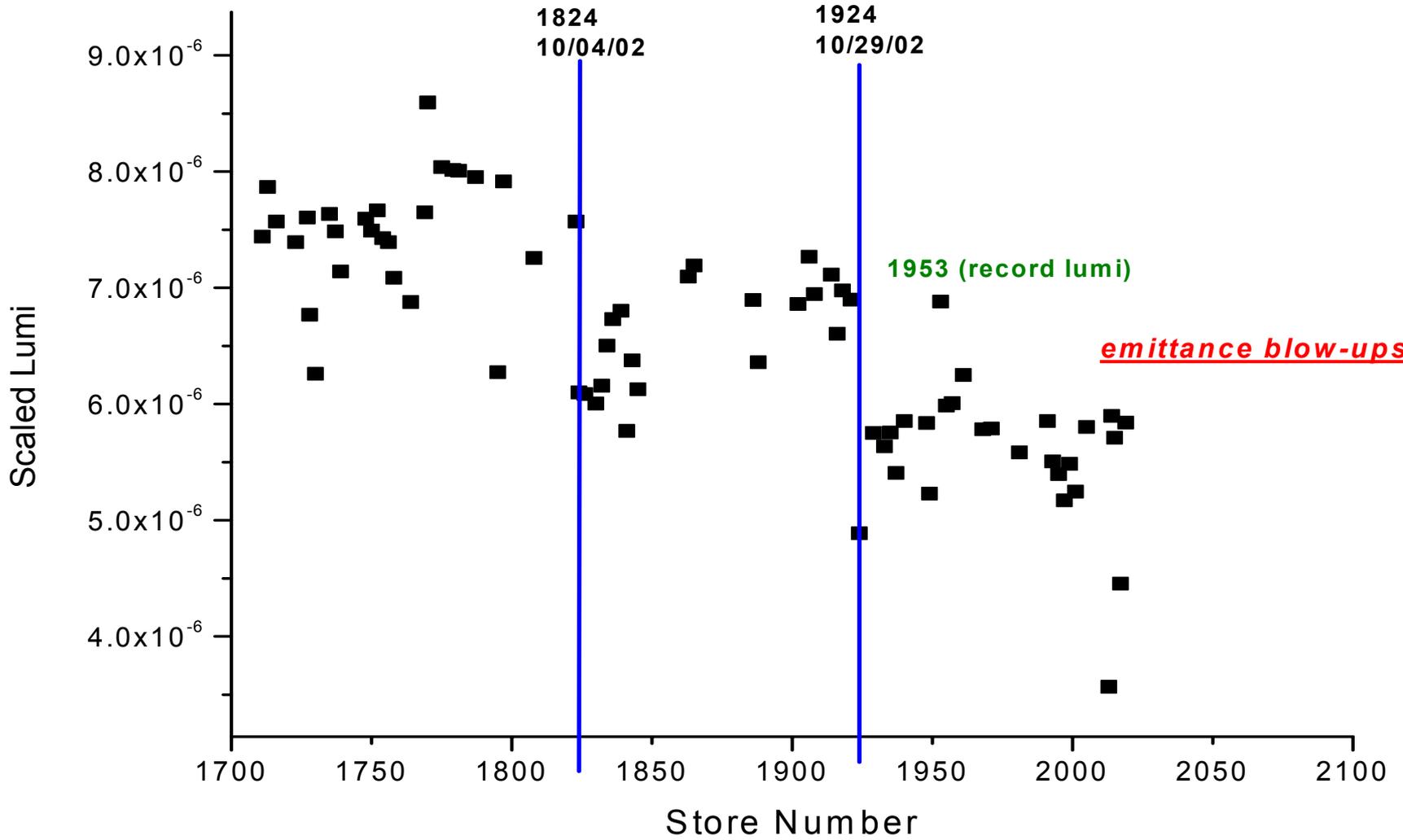


12/02/02

Collider Run IIA Integrated Luminosity



Luminosity / (Proton Intensity * Pbar Intensity)



Emittance Growth On Ramp

- Protons and Pbars can grow 3-7 pi early in ramp
 - Mostly vertical emittance, some horizontal, too
- Occurs with transverse dampers on or off
- Tried raising, lowering chromaticity – no progress
- Tried moving tunes – no help

- *Based on past performance, we have intensity to reach 40 E30 peak luminosity.*

- Need dedicated study time to fix.

Abort Kicker Prefires

- Three in November
 - PAK3 11/10 (CDF lost 2 Si ladders)
 - AAK1 11/22 (No lost ladders)
 - AAK3 11/28 (No lost ladders - Si standby/off)
- Paul Czarapata leading task force for kicker hardware/electronics evaluation and diagnostics
- Mike Church in charge of “protection schemes”
 - e.g., additional collimator @ A48?

Upcoming Studies/Maintenance

- Pbar
 - Debuncher/AP2 aperture scans
 - “Return to stacking” lattice ramp development
 - Open up AP1 to look for obstruction
- Tevatron
 - Investigate emittance blow-up on ramp
 - Study proton lifetime at 150 GeV
 - Investigate abort kicker prefires (lower operating voltage?)
 - Orbit smoothing
- Main Injector
 - Slip-stacking, 27 GeV coalescing (for 2.5 Mhz acceleration), beam-loading compensation on S29
 - Use 106 MHz cavity for pbar coalescing (on HEP shot)

Weekly Schedule

Update 12/2/02 3:17 PM	MONDAY 12/2/02	TUESDAY 12/3/02	WEDNESDAY 12/4/02	THURSDAY 12/5/02	FRIDAY 12/6/02	SATURDAY 12/7/02	SUNDAY 12/8/02
Owls 0000 to 0800	Stack and store	Tev 0600 EOS studies Pbar Picking Pbar -return to stacking ramps	Tev -4 hrs Pbar life time -4 hrs prefire investigation Pbar stacking	Shot		Stack and Store	
DAYS 0800 to 1600	Shot Pbar access for 1 hr Pbar studies Apl/3 optics(8gev)	NIF - PT Tev 1.50 gev feed down Pbar -access to prevault 8 hrs (bore scope)	NIF - PT Tev -4 hrs prefire investigation -4 hrs snapback Pbar -stacking (parasitic stack tail compensation)		NIF - PT	Stack and Store	
EVES 1600 to 2400	Store Pbar -Return to stacking ramp studies	Tev -4 hrs losses up ramp -pbar life time Pbar -vacuum pump down	TEV -4 hrs snapback -smooth ramp and squeeze Pbar -stacking			Stack and Store	

Schedule can be found at <http://www-bd.fnal.gov/operations/schedules.html>

Summary

- Delivered $> 6 \text{ pb}^{-1}$ this week – 2nd best ever
- Emittance growth up ramp hindering performance
- Abort kicker prefire task forces underway
- 5 shifts of studies this week