

Beams Week in Review



- Accelerator Performance

- Week 81 integrated Luminosity : Record 4.79 pb^{-1}
- Store 1775 Average Peak Luminosity: $2.85 \text{ E}31$
- Integrated Luminosity for FY2002: 80.28 pb^{-1}
- Pbar Stacking Rate reached 12.43 mA/hr for 1 hr

Beams Week in Review



- Notable Changes and Improvements
 - Consistent use of Tevatron pbar closure
 - Further optimization of pbar coalescing in MI
 - Pbar Beam loading compensation operational
 - Improvements in stacking rate

Beams Week in Review



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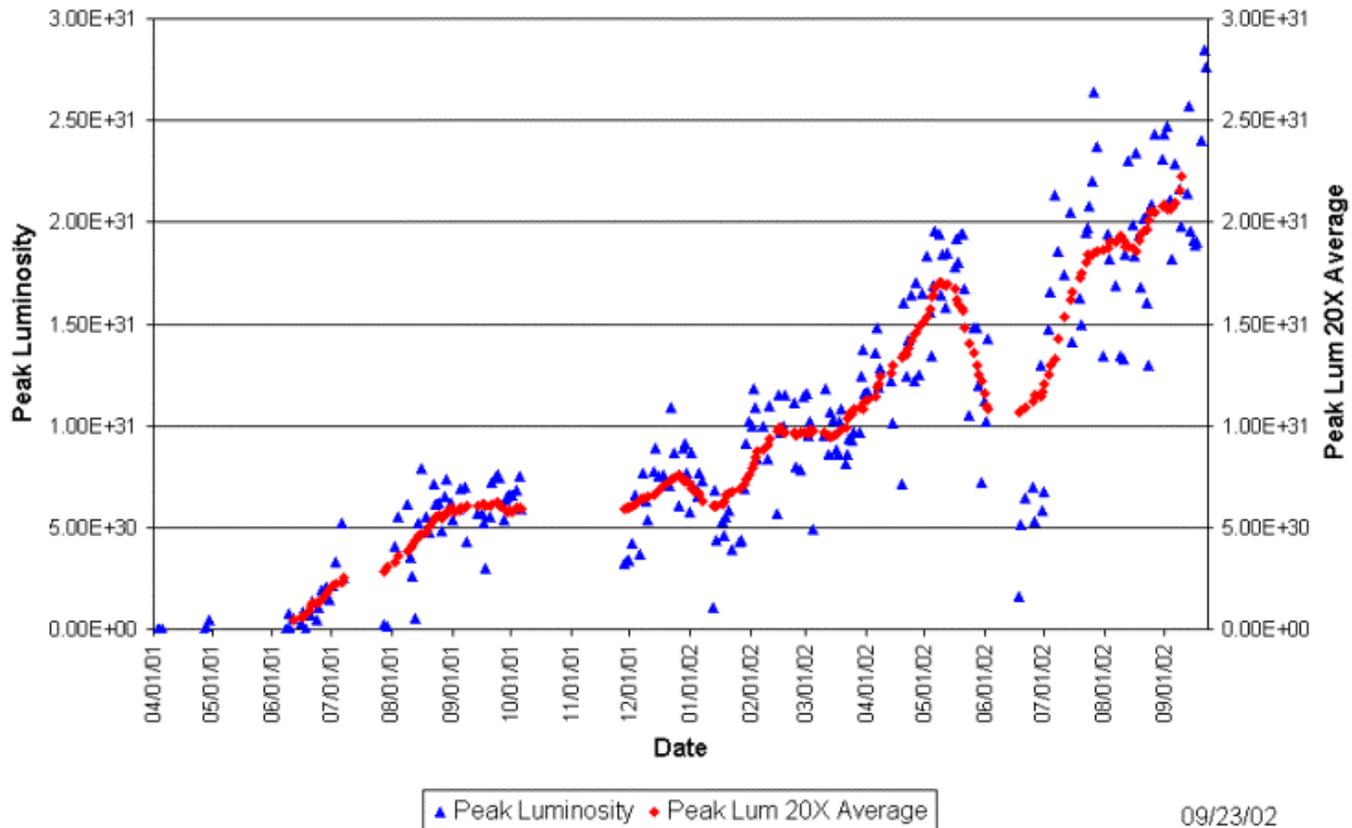
Store Summary Week 80

<u>Store #</u>	<u>Initial Luminosity</u>	<u>Duration</u>	<u>Termination</u>	<u>comments</u>
1739	1.98 E31	18 hours	Intentional	TEL on; BLC tuned
1748	2.14 E31	7.45 hours	intentional	No BLC
1750	2.57 E31	17.75 hours	intentional	BLT on pbars
1752	1.93 E31	18.1 hours	intentional	No BLC; BLT on pbars
1754	1.96 E31	16.5 hours	Intentional	“
1756	1.9 E31	16.75 hrs	intentional	“

Peak Luminosity



Collider Run IIA Peak Luminosity

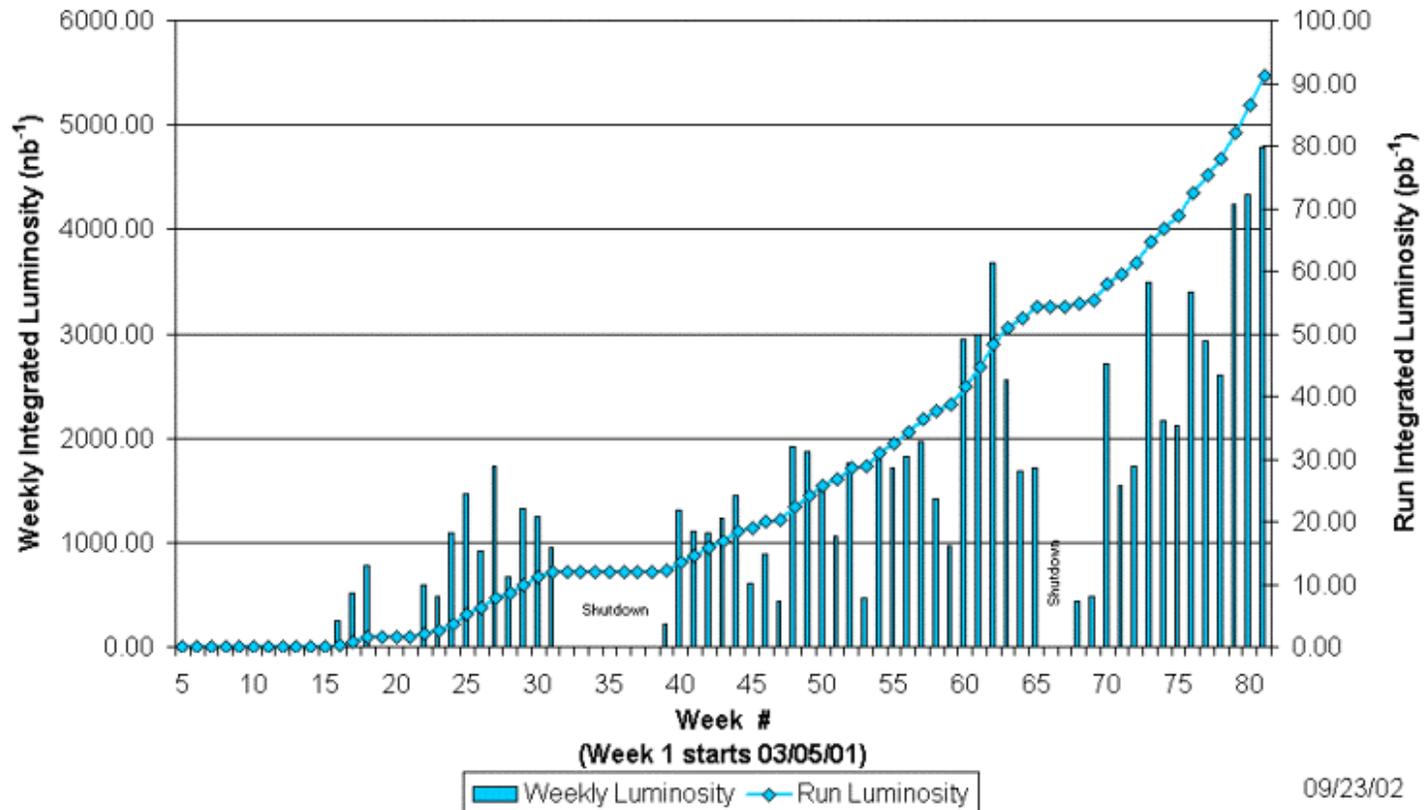


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Integrated Luminosity



Collider Run IIA Integrated Luminosity



Beams Week in Review



- Current Issues

- Increase the number of protons through MI coalescing
- Increase MI pbar coalescing efficiency to the 80 - 90% level
- Reduce proton and pbar bunch length into tevatron
- Increase proton and pbar lifetime at 150 GeV
- Reduce losses of proton and pbar on ramp
- MI – Tevatron transfer line matching
- Increase Luminosity lifetime
- Improvement in pbar stacking rate

Accelerator Studies



- Major focus for studies *should* result in near term gains in Luminosity

Accelerator Studies, Tevatron



- Tevatron Tune and Coupling Drift
- Tevatron Dampers (two shifts)
- MI-Tev lattice matching for A1 and P1 transfer lines
- Loss on ramp vs longitudinal emittance
- 150 Gev lifetime optimization using octupoles

Accelerator Studies, Main Injector



- Reduction of longitudinal emittance for proton coalescing
- Main Injector 150 Gev closed orbit phase advance and dispersion measurement
- Main Injector 150 Gev lattice function measurement using TBT
- Tev-A1-MI optics verification
 - Using reverse protons from tevatron
 - First turn flash orbit

Accelerator Studies, Pbar



- Re-phasing Debuncher cooling systems
- Characterization of AP2 aperture
- Characterization of Debuncher aperture

Schedule for this week



- Accelerator Studies
- Stack 'n Store
- *Breaking Records*

Schedule for this Week

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Update 9/23/02 2:29 PM	MONDAY 9/23/02	TUESDAY 9/24/02	WEDNESDAY 9/25/02	THURSDAY 9/26/02	FRIDAY 9/27/02	SATURDAY 9/28/02	SUNDAY 9/29/02
Owls 0000 to 0800	Pbar - Stack Tev - Store	Tev -shot set up -recycler shot 0600-1400 Pbar access 0700 access to change chipmunks (Linac)	Tev -ramping lattice -octapole life time(6hrs) Pbar -reverse proton AP2/debuncher -0600 (8 hr) Pbar access	Tev -damper studies Pbar -stacking	Stack and store	→	→
DAYS 0800 to 1600	Pbar - Stack Tev -tune Drift studies	NIF - PT Tev -store Pbar -1400 pbar start up Booster -Access 2 hrs(0830) -studies	NIF - PT Tev -Damper studies Pbar -1400 Pbar start up Mi -150 gev orbit dispersion	Pbar -stacking Shot set up	NIF - PT Stack and store	→	→
EVES 1600 to 2400	Tev Tune drift studies Pbar Stack	Tev -EOS store studies (approx 2300) Pbar -phase bands 3&4 tune up 6-8 hrs. -reverse proton AP2/debuncher	Tev -A1/p1 lattice Pbar -phase bands 1&2 tune up 6-8 hrs. 120gev -ps tests& beam to Pbar dump Mi -150 gev TET		Stack & store	→	→

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