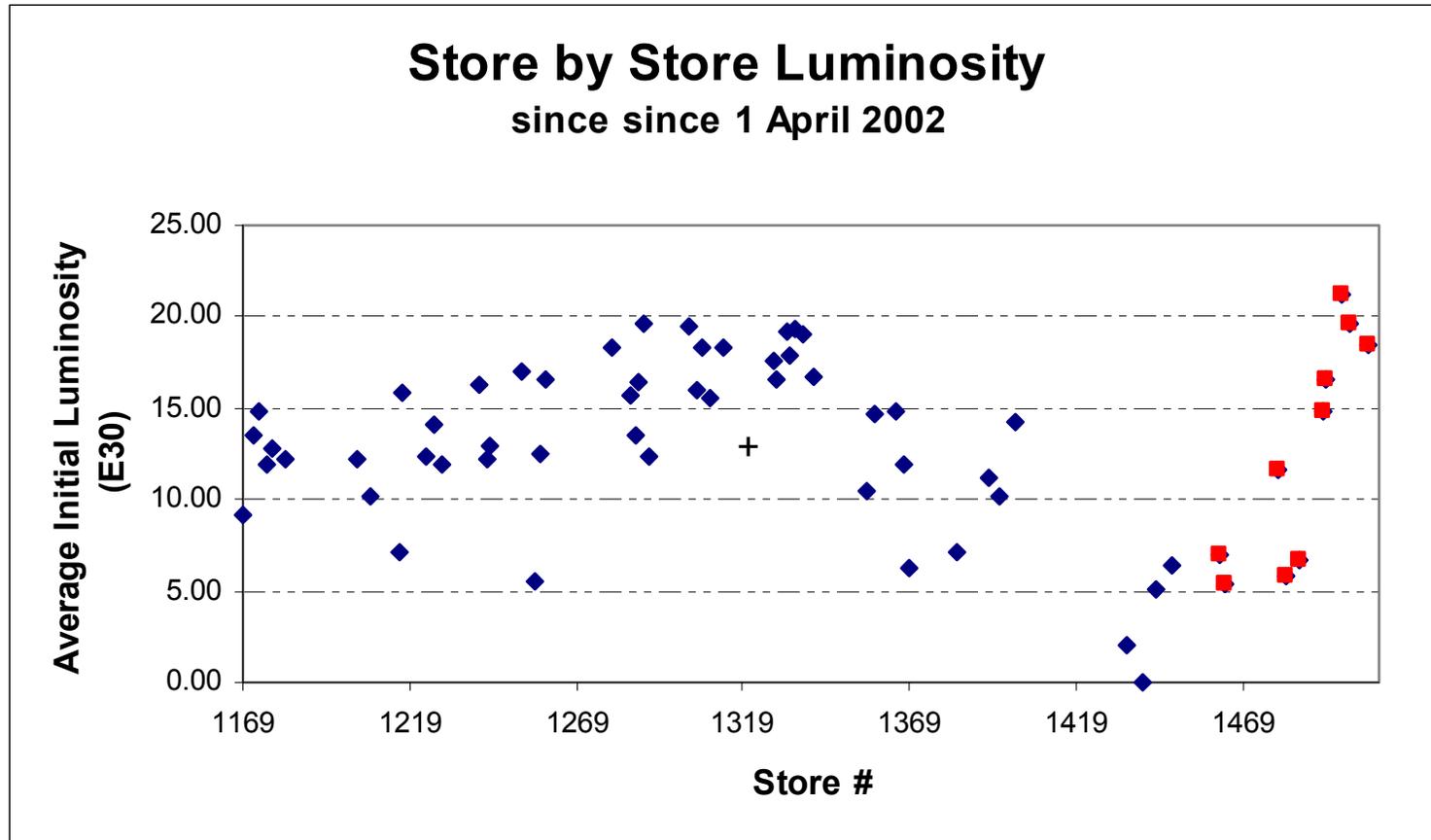


Beams Week in Review



- Improved Performance
 - Run IIa record luminosity
 - Good reliability

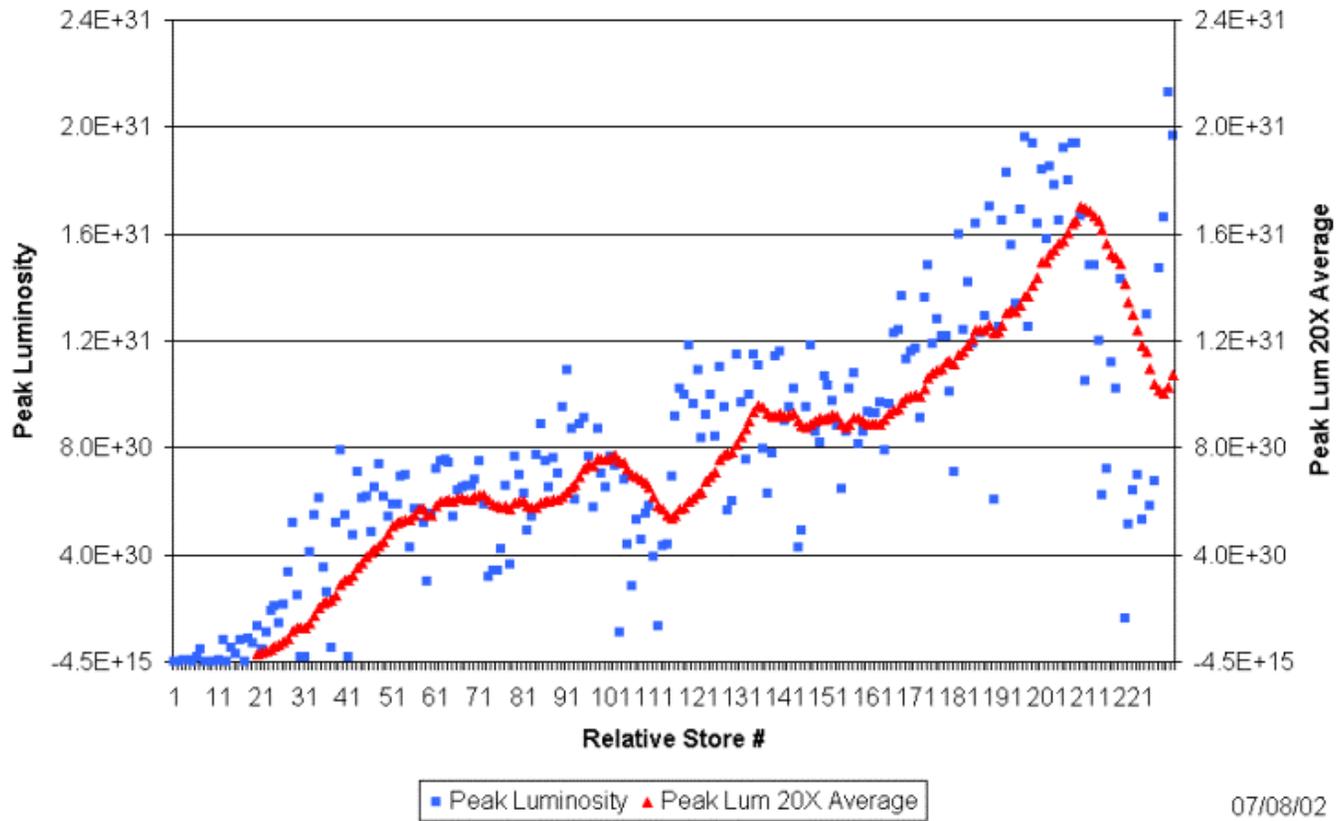
Initial Luminosity



Peak Luminosity



Collider Run IIA Peak Luminosity

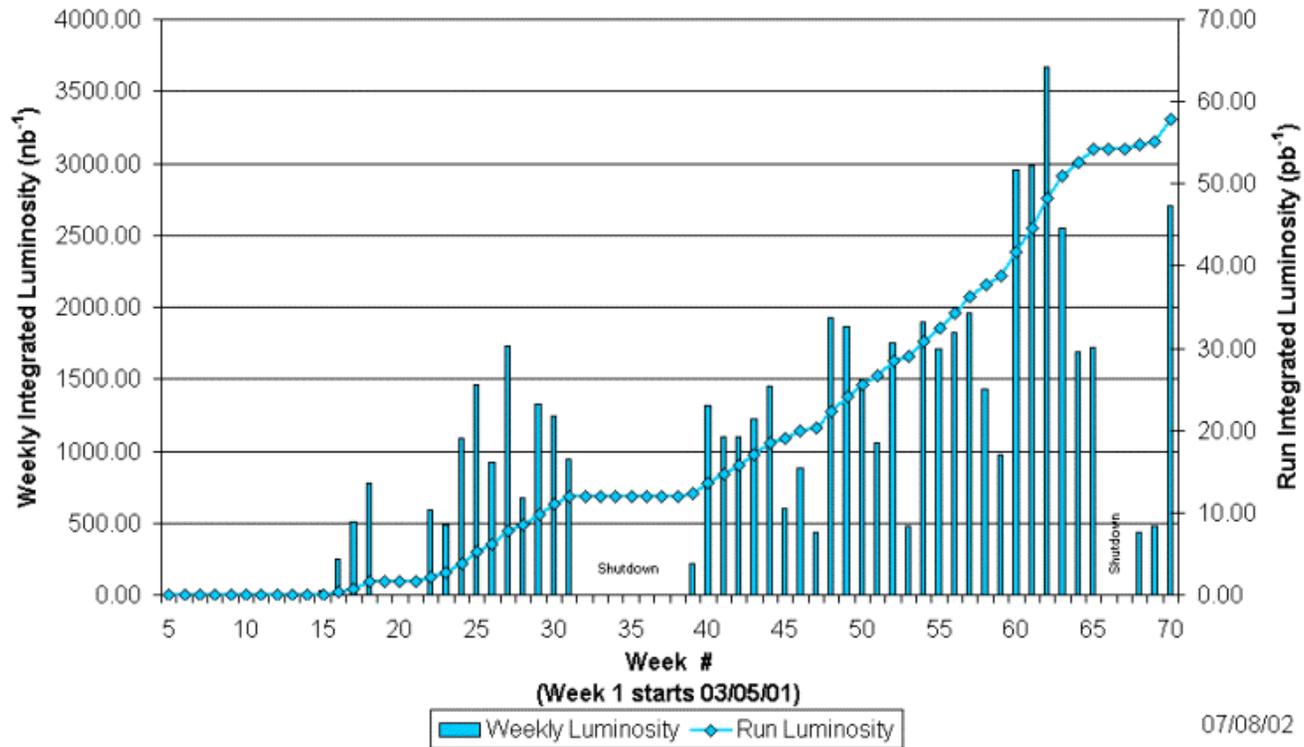


07/08/02

Integrated Luminosity

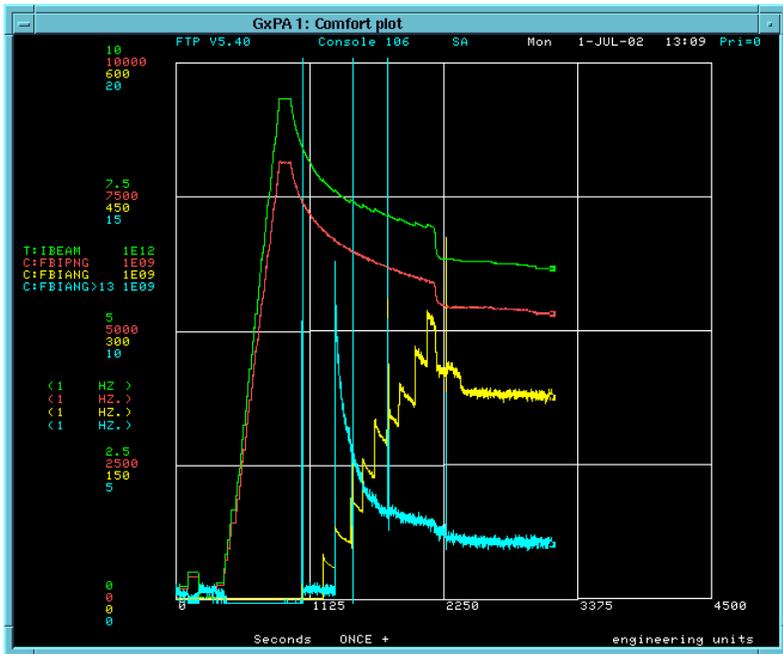


Collider Run IIA Integrated Luminosity

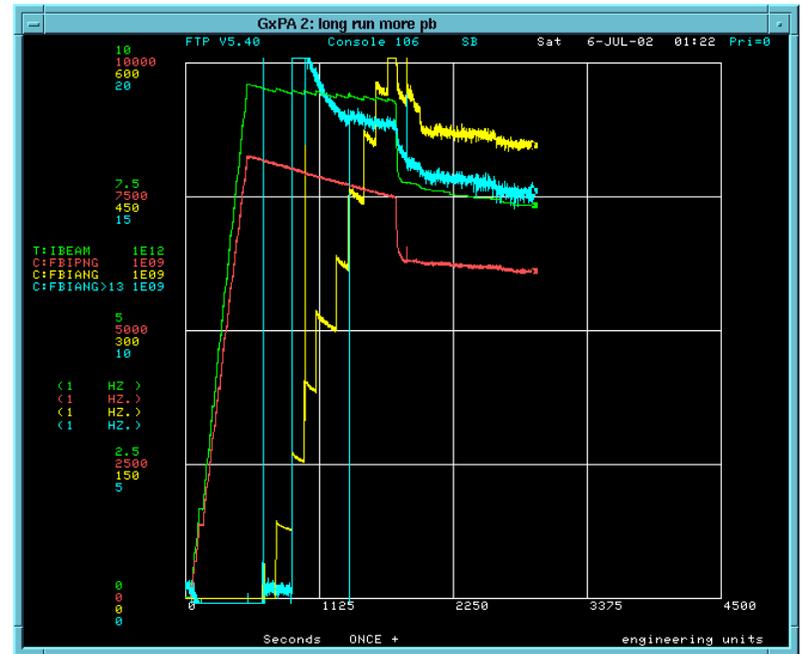


07/08/02

Why Improved Luminosity?



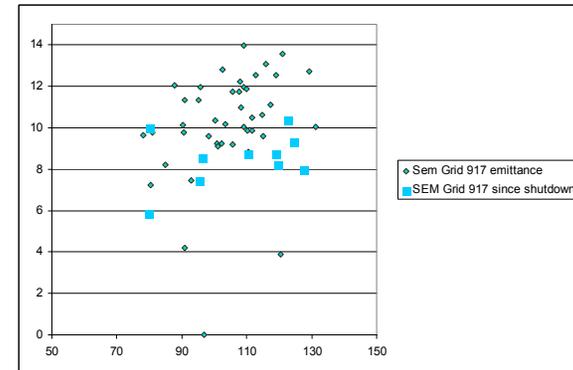
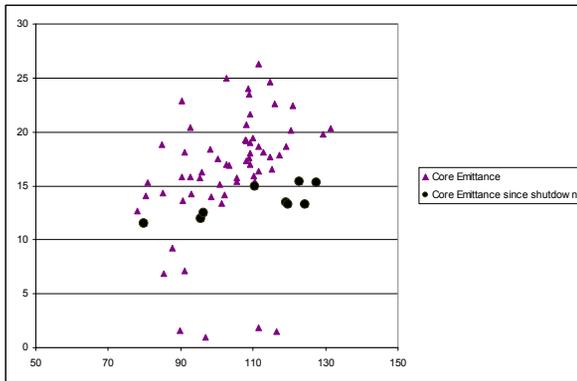
Store 1486 – 1 July



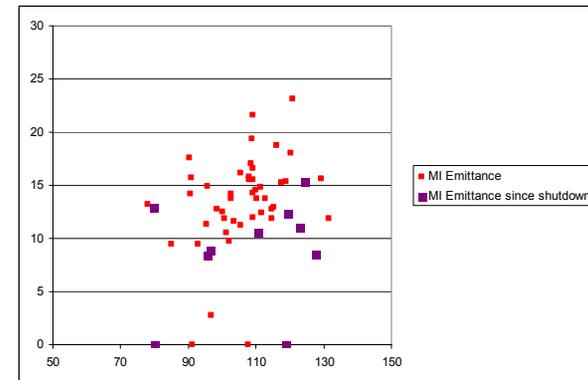
Store 1499 – 5 July

Proton Lifetime at 150 GeV

Why Improved Luminosity?



*Reduced Transverse
Emittances
as a function Stack Size
– more Pbars to
Tevatron*



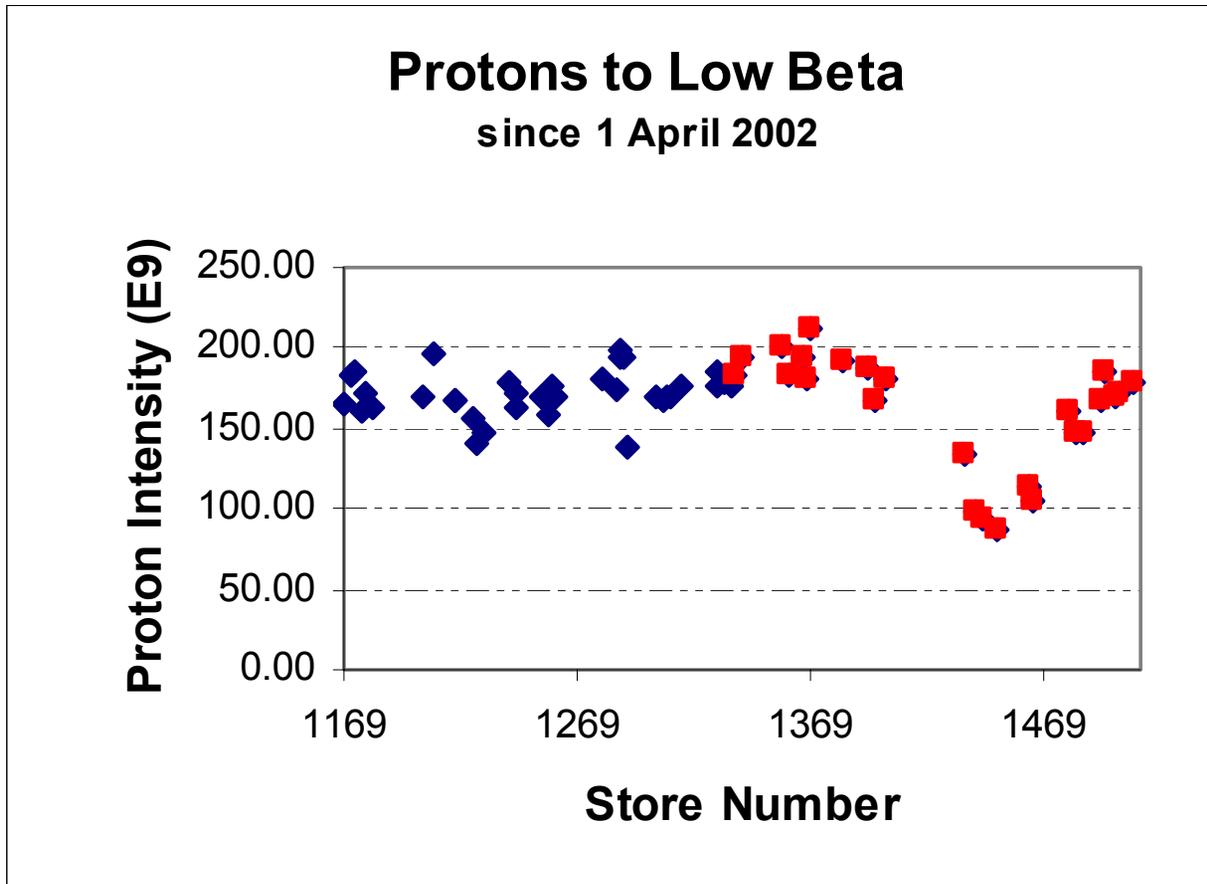
Store Summary



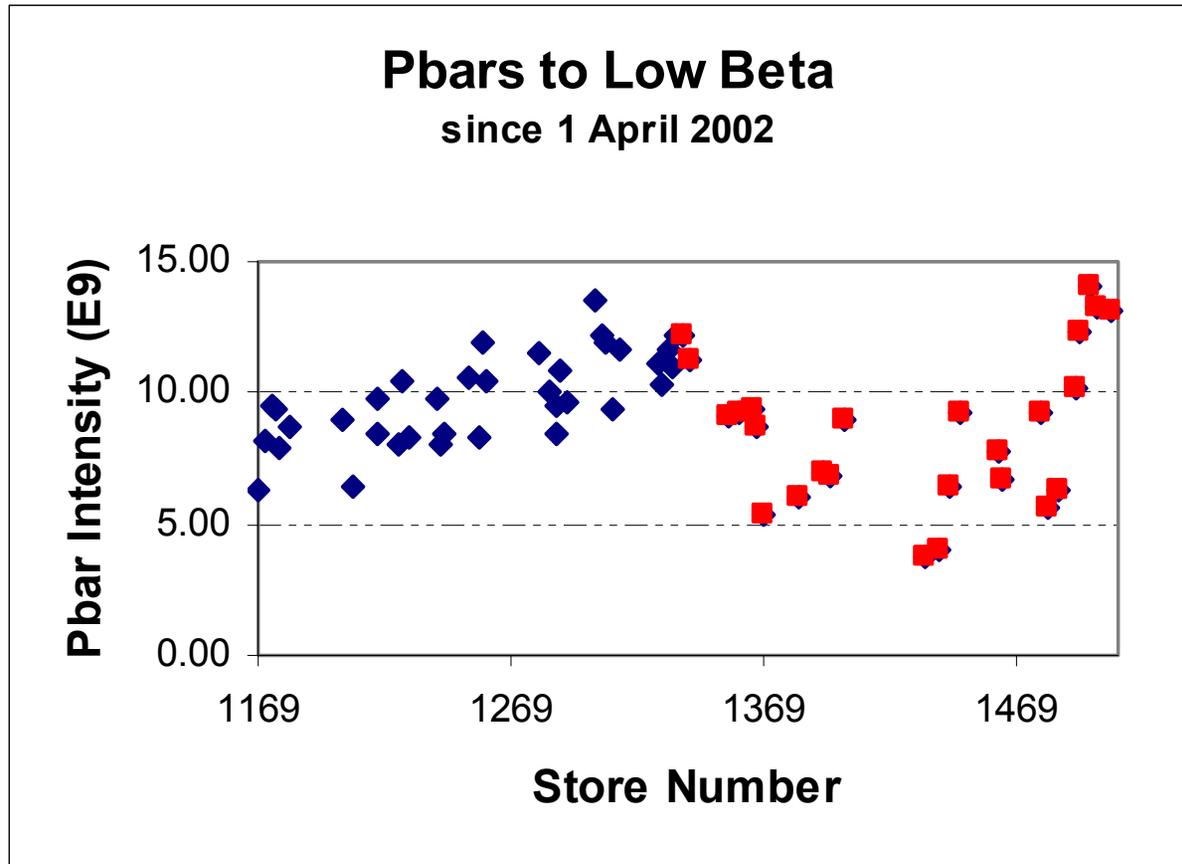
f

<u>Store #</u>	<u>Initial Luminosity</u>	<u>Duration</u>	<u>Termination</u>	<u>comments</u>
1486	6.67 E30	21 hours	intentional	
1493	14.77 E30	16.2 hours	intentional	Post-studies, A0 vertical angle bump
1494	16.64 E30	18.75 hours	D3 dump failure	
1499	21.22 E30	18.87 hours	intentional	Record pbars to low β
1501	19.66 E30	15.58 hours	intentional	
1507	18.39 E30	16+ hours	in progress	Improved proton losses up ramp

Protons to Collision



Pbars to Collision



Tevatron Summary



- Studies
 - A0 vertical angle change (-0.05 mrad)
 - Coupling at 150 GeV and helix
 - Tevatron Electron Lens
 - ‘dancing’ Bunches
 - Bunch-by-bunch longitudinal damper

Pbar Summary



- Stacking sluggish
- PMAG failure
- Studies
 - Cut short by PMAG failure
 - Debuncher tunes
 - P2 trim strength re-calibration
- Core cooling equalizers
 - Design complete
 - Install this week?



- Low Emittance Proton Coalescing Studies, 8 GeV coalescing
- Flying Wire Studies
- MI8 Line/MI lattice matching studies.

Schedule for this Week



- Five shifts of Tevatron studies in two parts
 - Proton lifetime vs. F0 Lambertson position
 - P1 and A1 line lattice measurements
 - Tune drift
 - 36 X 12: pbar lifetime vs. proton intensity
 - Longitudinal damper
 - Operational studies as needed

Schedule for this Week



- **Pbar**
 - Beam line lattice
 - A:EKIK flattop
 - Stacking/Accumulator cooling tune up
 - Install equalizers this week?
 - Support Tevatron studies
- **MI**
 - Support and participate in other machine studies
 - 8 GeV coalescing
 - MI8 Mikado
- **Recycler**
 - Transfer line
 - Injection losses
 - Pbars next week?

Schedule for this Week

f

Update 7/8/02 3:15 PM	MONDAY 7/8/02	TUESDAY 7/9/02	WEDNESDAY 7/10/02	THURSDAY 7/11/02	FRIDAY 7/12/02	SATURDAY 7/13/02	SUNDAY 7/14/02
Owls 0000 to 0800		Tev -tev studies Pbar -Ekik Pt studies -reverse Protons	Tev -tune drift @150gev. Pbar -stack	Tev -Store Pbar -reverse piton	Tev -36 x 0?? Pbar -stacking	Stack and store	Stack and store
DAYS 0800 to 1600	Store	NTF-PT Tev -Proton lifetime on Helix(move Lamb out)(@150gev. Pbar -Core cooling(20 Ma) RR 3 pulses per Minute	NTF-PT Shot set up Stack and store	Tev -noon Pbar lifetim vs Proton 36 x 12 Pbar -Stack till noon	NTF-FT Noon shot	Stack and store	→
EVES 1600 to 2400	Tev -Store till 2000 -Fix wet engine 3-4 hrs -quiet time -tev studies Pbar P1/AP3 Lattice	Tev -P1 & A1 line Lattice @150. Pbar -stacking	Stack and Store	Tev -longitud. Damper studies. Pbar Install equilizers	Stack and store	Stack and store	→

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

Increased Luminosity?



- **Pbar cooling equalizers**
- **Shot Lattice**
- **Increased Stacks**
- **Reduced Pbar Momentum spread**
- **Reduce beam loss in Tevatron**
- **More Protons in Tevatron**