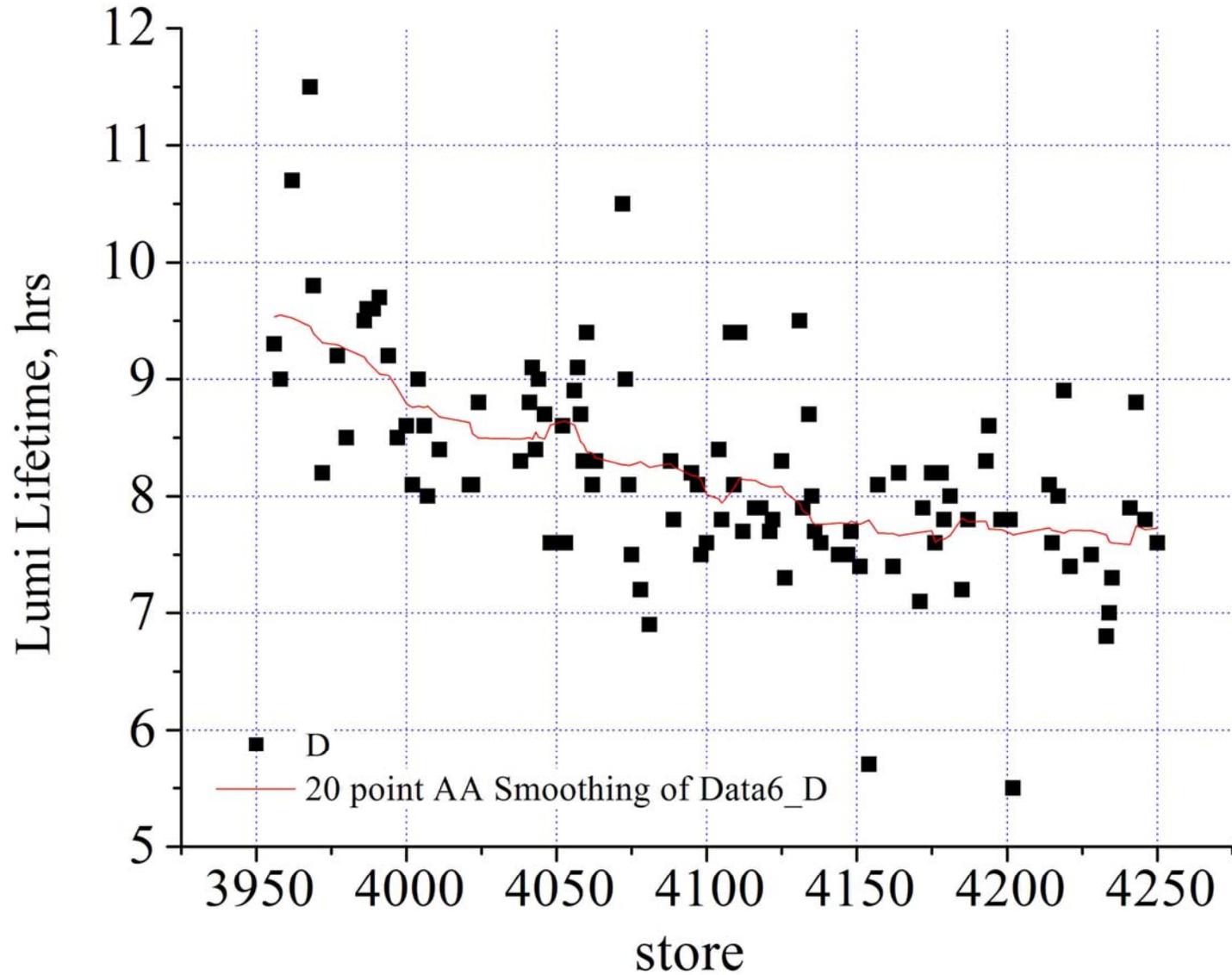


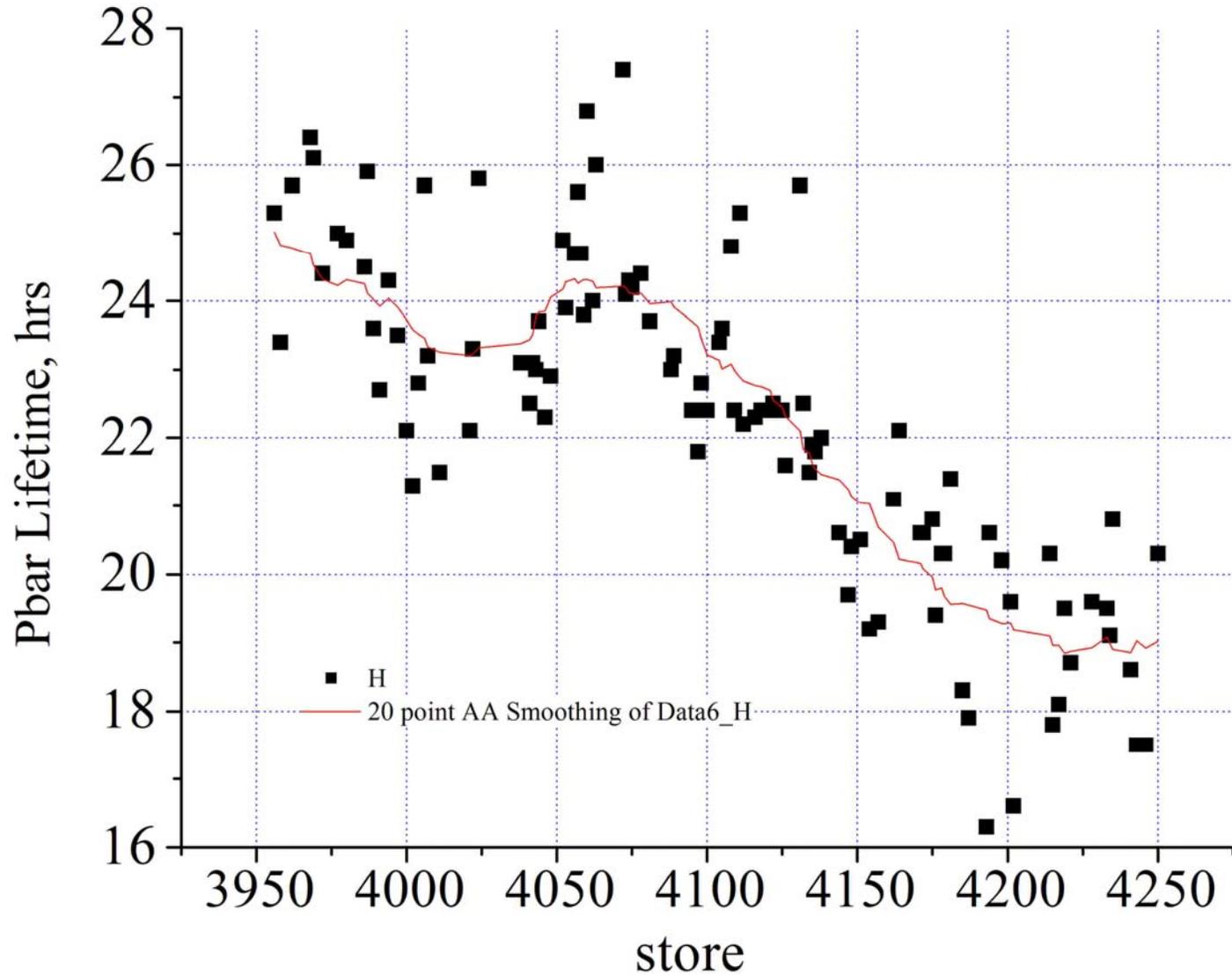
Tevatron progress: Mar'04 to Jun'05

- Luminosity: (average initial peak L – *good weeks*)
 - **Mar'05 (7 stores #4042-4053)** $L=103e30$
 - **May'05 (7 stores #4136-4154)** $L=109$ +6% --
-5% N_{pbar} , +2% N_p , ($\beta^* \epsilon_{eff}$) reduced -12%
 - record L as of Mar'05 $117e30$ store #4053
 - record L as of July'05** $126e30$ store #4138
 - Lifetimes: L 8.4 \rightarrow 7.7 hrs, ϵ_{eff} ~same~15 hrs N_{pbar}
23 \rightarrow 19hrs, N_p ~100 \rightarrow 130hrs
 - Int L is about same 15-16 pb-1/wk
- FY'05 goal integral 470 pb-1 (now ~390 pb-1)
 - 1 fb-1 of Run II celebrated June 24, 2005

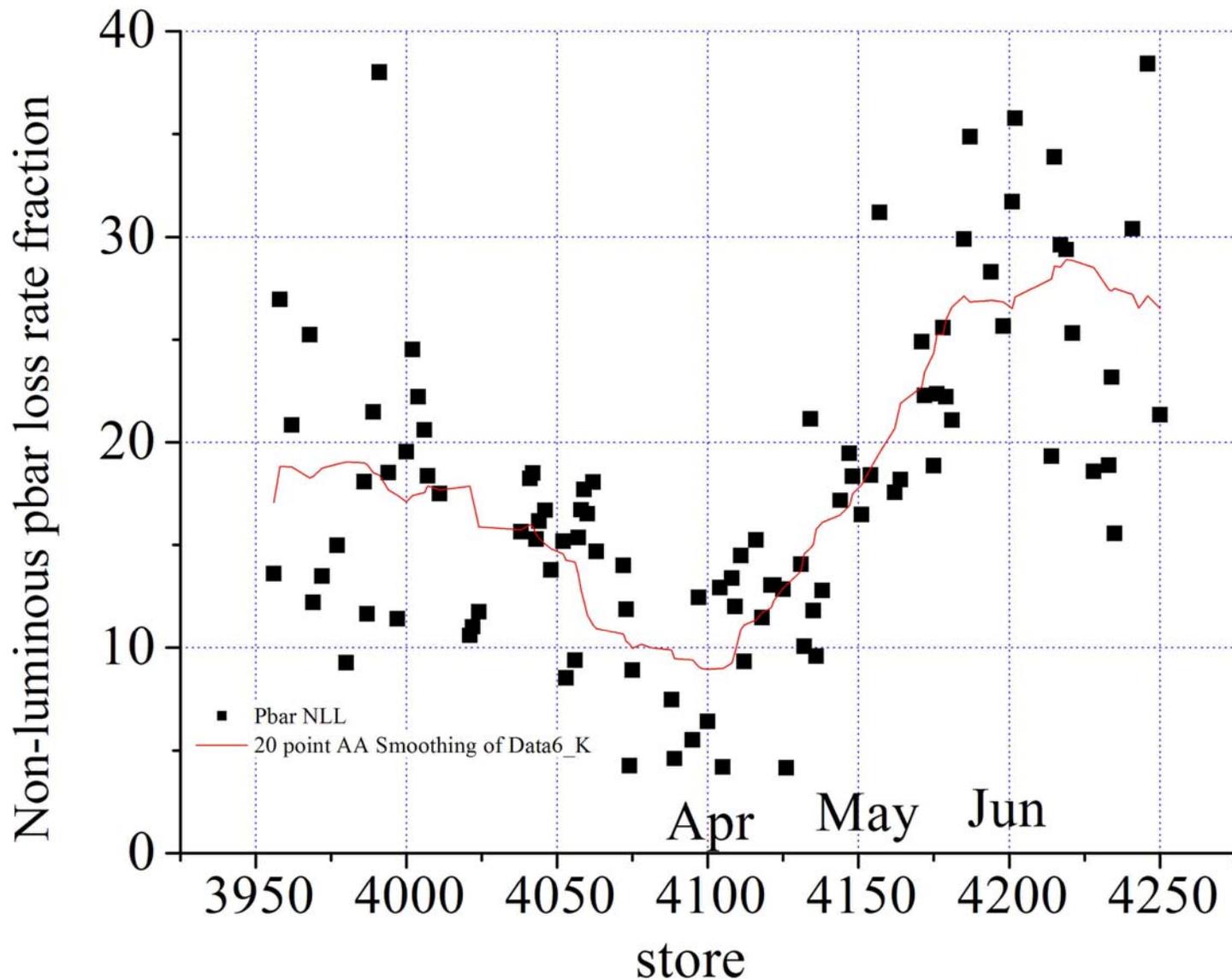
Luminosity Lifetime since 02/2005



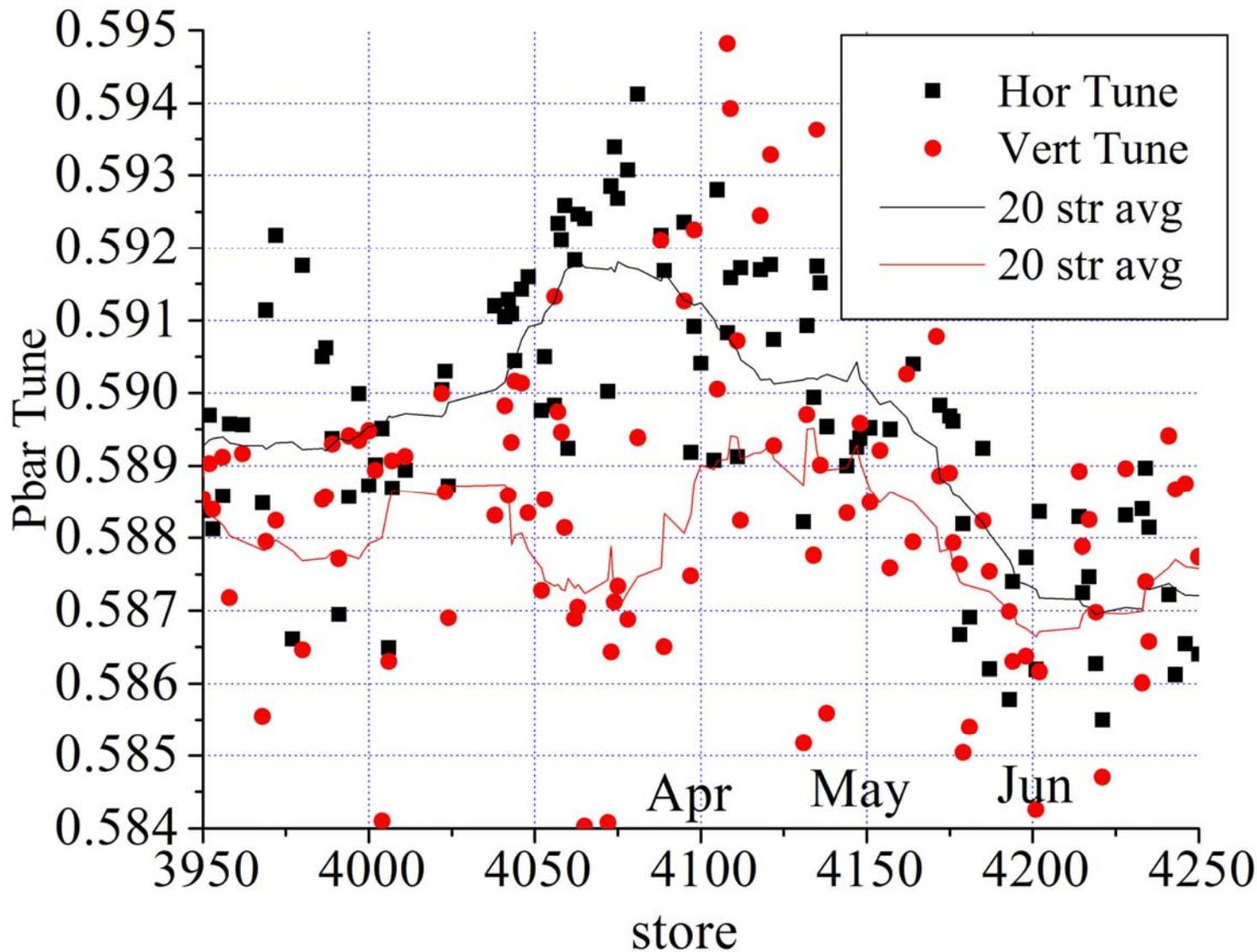
Pbar Lifetime since 05/2005



Pbar Non-Luminous Losses



Pbar Non-Luminous Losses



Highlights on Operations/Reliability:

- Octupoles improved 150 GeV losses $4+3=7\%$ (PI, YA, JA)
- RR pbars small emm \rightarrow helps on ramp
- Pbar tunes drifted to worse, protons' OK
- Longitudinal instability not resolved, patched (RM)
- Reliability's getting us: 5 A(P)AKs, 4 HV sparks, 3 PS trips, RF trip, 2 DC beam, D0 SVT, lightning glitch, + problems with injectors
- D0 losses seq.23 solved, after seq.25 not yet
- E44 losses during pbar injection gone
- CDF orbit moved -400 um vert
- CDF Hall T \rightarrow orbit 0.2-0.5 mm \rightarrow poor lifetime, lostp

Tevatron Beam Physics Progress:

- O1,O2,OZF,OZD help operation at 150 (PI, YA, JA)
- Longitudinal blowup not resolved yet (modes 1&3, Robinson no help, dFrf influence)
- Lattice calc from DOM data (VA, AV) and from TBT data (RT, YA, EW)
- Helix effect $\tau \sim d^3$ (RM)
- Transverse instability studied, signs of multibunch dynamics (PI+)_
- Beam-Beam Progress: PhysRev paper submitted (VS+), pbar tune stabilization ongoing (RM), long beam-beam (AT, VS), dQ in Schottky (AJ), high Np stores – no room (AJ), AXiao confirmed Yuri's 150 cogging
- RF Lumi leveling and new WP plan proposed (VS)
- 28 cm beta* ongoing (Sasha Valishev, Yuri, Valery)
- Crystal collimator not found ...yet (DS, TJ)
- 150 GeV acceptance is OK (XL, Tan)
- TEL-2 magnets tested, measured (XL, Seva)
- E-cloud investigated (XL, Bruce)
- dQmod $\sim 3e-4$ at 60, 120, 1300 Hz (YA)
- Orbit not correlated with survey (NG)

Diagnostics:

- New BPMs installed, commissioned (SW, BW, MM, JS+)
- FWs fly in stores (Nathan, Ron)
- Pbar SL mirror “in” in stores (Randy)
- Long phase detector continues (Aisha, BW, JPC)
- BBQ shows pbar tunes at 150 at 0.591 (Tan)
- TT ~works (Tan)
- RGA installed at A49 HV sep (Scott, Bruce)
- Pbar tunes not seen by BB scope (JPC, Vic)
- Inj oscillation system, dEmm ~works (Vic)
- Q' from C100 operational, ttrack changes (VR)

Misc:

- End of March DoE Review : B+
- EPRAs: Dean, Valery, Mike Martens
- New director P.Oddone since July 1, 2005
- R&D efforts on future projects to be beefed up → some organizational changes anticipated
- 6 invited speakers for PAC'05 from Tevatron
- LINUX migration in ~ year (Jerry, P.Caspers)
- Personnel In:
 - Seva Kamerdzhiev
 - Eliana Wendt
 - Sasha Valishev
- Out: Petr Ivanov (07/10/05)
- Letters of recognition to R.Moore, (Yuri, Petr & Jerry)
- 12 weeks shutdown to start ~Oct.31, 2005

Next Steps

- Reduce β^* 35 \rightarrow 28 cm \rightarrow ~10% in L
Sasha/Jerry
- Lifetime improvements at HEP \rightarrow ~10% in $\int L$
 - Move pbar tunes up *Tev Coord*
 - Stabilize pbar tunes in stores *Ron*
 - Explore new proton WPs $7/12 < Q < 3/5$ *Jerry et al*
- Studies for WP move to 2/3 and Shutdown work *coord*

Other items:

- Tune-tracker in HEP store (CYTan)
- Commission orbit stabilization system (Vahid Ranjbar)
- Assemble and test TEL-2 (BBC team)
- Commission Long Phase Monitor (Aisha, Jean-Paul)
- See pbar tunes line from modified stripline Schottky (JPC)
- Tune-up TEL for DC beam cleaning at 150 GeV (XL)
- Explore low Q' with octupoles at LB (YA, VS)
- Replace RF cavity water-heaters (JohnReid)
- Find the Bended Crystal Collimator show channeling (Dean)

Next Three Months: Expectations

- In March I expected “... *peak CDF luminosity to be around 120-130e30 by May 1, 2004*” we actually reached 138e30 in #4138.
- Over the next 3 months I expect:
 - stable operation at >100 e30, combined shots
 - $\beta^* 35 \rightarrow 28$
 - So, peak initial luminosity at CDF to be around 150-160e30 by October 2005.

Shutdown 2005

- 11-12 weeks long, many jobs, including
 - New separators B48,A49,A17 Ron, Yuri +
 - Unroll D16 by 1 deg Jim Volk, Sasha
 - A48 collimator → 1 m Dean
 - Install TEL-2 at A0 VS, ZXL, SK
 - Install IPM, OTR @E0 Andreas, Vic
 - FWs vacuum upgrade Bruce, J.Zagel
 - Reshim remaining 240 dipoles J.Volk
 - Kaiser coil and roll measmnts JA, J.Volk
 - Move RF cavity water heaters J.Reid
- *Preparatory work for new WP:*
 - *2/3 resonance strength compensation (with magnets)*
 - *Stronger feeddown circuits at LB*
 - *Better octupoles at LB (more magnets?)*