LONGER TERM PROSPECTS

(quoted from Steve Holmes, Accel. Div., Fall 1999)

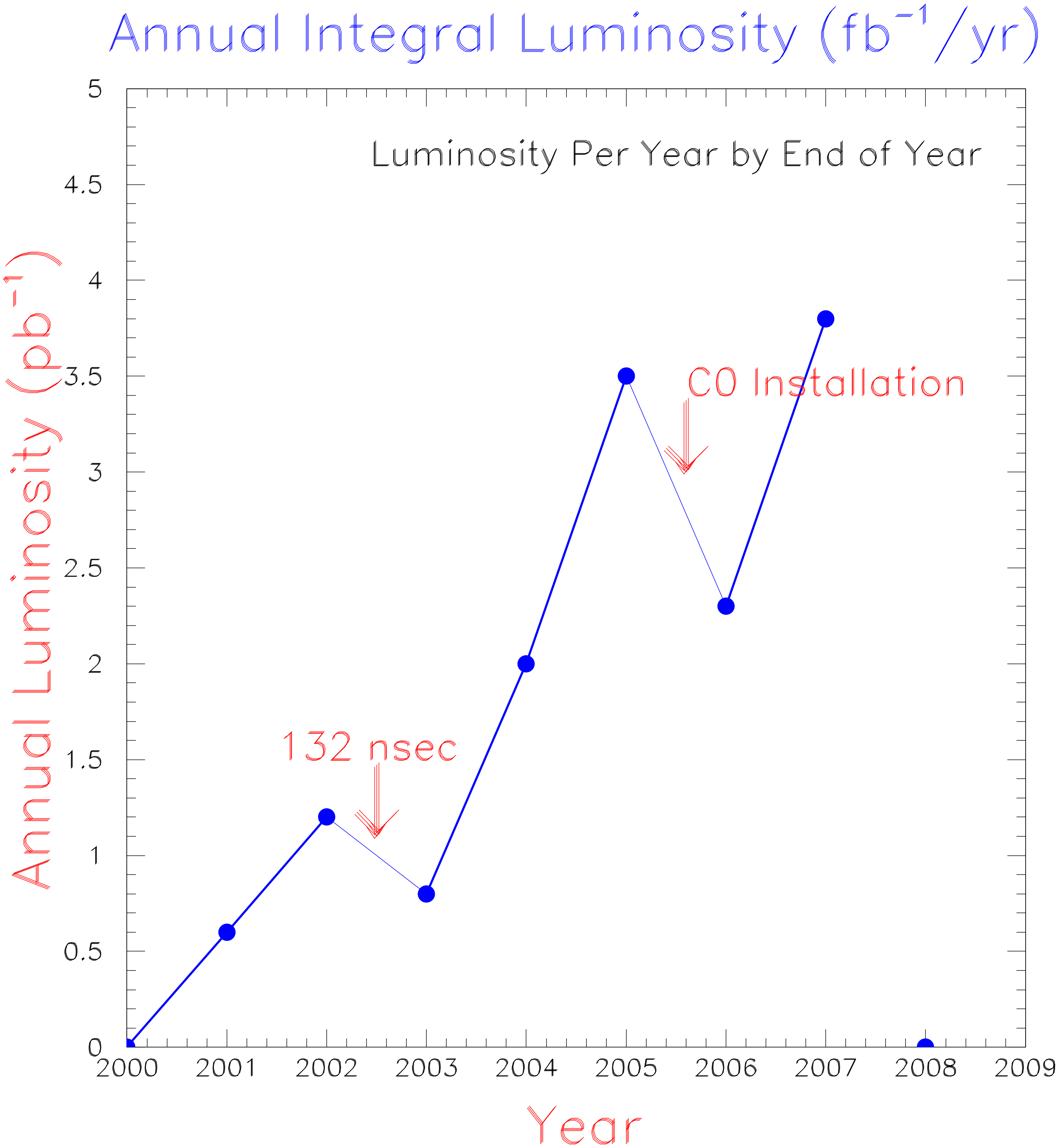
The initial Run II goal is achievement of a luminosity of $\sim 1\times10^{32}$ cm^{-2}sec^{-1}, with 2 fb^{-1}delivered to each detector by the end of 2002.

Further performance enhancements would be based upon:

- Improved antiproton availability
- Electron cooling
- Slip-stacking
- Liquid lithium lens
- Aperture improvements
- Controlling the antiproton (long-range) beam-beam interaction.
- Electron beam compensation

Possible Accumulation of Luminosity in the pre-LHC Era:

Year	Project/Goal	Accumulated Luminosity
2001	Main Injector and Recycler	0.6 fb^{-1}
2002	Initiate antiproton recycling	1.2 fb^{-1}
2003	6 month shutdown to install e-cool, 132 nsec, and other intensity improvements	0.8 fb^{-1}
2004	Achieve 2×10^{32}	2.0 fb^{-1}
2005	Achieve 3×10^{32}	3.5 fb^{-1}
2006	Achieve 5×10^{32}	2.3 fb^{-1}
	6 month shutdown to install C-0.	
2007	Achieve 5×10^{32}	3.8 fb^{-1}
TOTAL		15 fb^{-1}



Annual Integral Luminosity (fb^{-1}/yr)
Luminosity Per Year by End of Year
C0 Installation
132 nsec
Annual Luminosity (pb^{-1})
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Year

Is the Fermilab Schedule Realistic and Optimal For Higgs Discovery?

Scheduled 6-Month Shutdowns May Be Unrealistically Short

Scheduled Shutdowns May Be Not Optimally Placed:

- Top Discovery Paradigm a Good One:
  Run for 1/3 of Total, Look, and Then Run Blind for 2/3. Take 20 fb^{-1}as Total: Implies Run for 7 fb^{-1}Before First Major Shutdown (If Possible).
- First Shutdown Should Encompass Major Accelerator Upgrades, Silicon Replacement
- No Major (Scheduled) Shutdowns in 2nd Part of Run (the 2/3).

Is the Following Impossible?

(Really Pushing For a Sensational Fermilab Discovery): Consider As A Goal the Following: (Assume 1.5 $\times$seconds per year)

Year	Project/Goal	Lum/Yr	Total Lum
2001	Main Injector and Recycler	0.6 fb^{-1}	0.6 fb^{-1}
2002	Initiate antiproton recycling	1.2 fb^{-1}	1.8 fb^{-1}
2003	Achieve 2×10^{32}	2.0 fb^{-1}	3.8 fb^{-1}
2004	Achieve 3×10^{32}	3.5 fb^{-1}	7.3 fb^{-1}
2005	6 month shutdown to install e-cool, 132 nsec, and other intensity improvements	0.8 fb^{-1}	8.1 fb^{-1}
2006	Achieve 5×10^{32}	5.0 fb^{-1}	13.1 fb^{-1}
2007	Achieve 10×10^{32}	10.1 fb^{-1}	23.1 fb^{-1}
2008	Achieve 20×10^{32}	20.1 fb^{-1}	43.1 fb^{-1}
TOTAL		43.1 fb^{-1}	

Are There Higher Priorities? What Are the Realities Standing in the Way?