MiniBooNE Report

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for the MiniBooNE collaboration

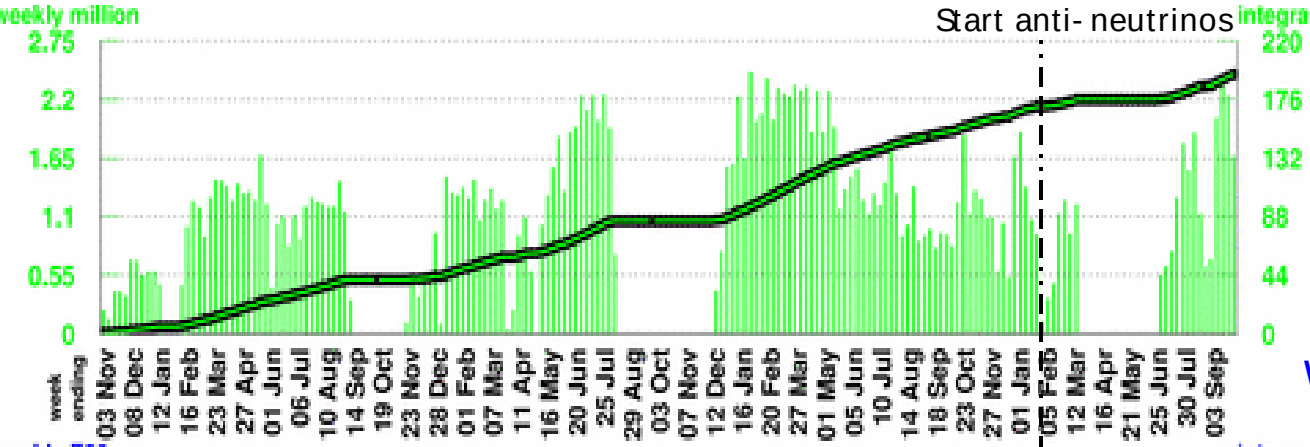
11 September 2006

Two Week Summary

28 Aug – 04 Sept: 1.02E19 POT, 89% Uptime
04 Sept – 11 Sept: 0.91E19 POT, 89% Uptime

- Two weeks of exceptional running, Linac and Booster delivering stable high intensity beam.
- Major Downtime:
  - 5 hrs, ACNET hard drive replacement and horn current readback studies (Aug 31).
  - 8 hrs, Linac Klystron failure (Sept 02).
  - 8 hrs, low intensity due to Booster losses (Sept 04).
  - 5 hrs, Booster east anode power supply transformer replacement (Sept 06).
  - 5 hrs, Booster MKS07 failure (Sept 09).
  - 20 hrs, ACNET server down. Took good neutrino data, but some loss of beam information (Sept 10).

28 Aug – 11 Sept



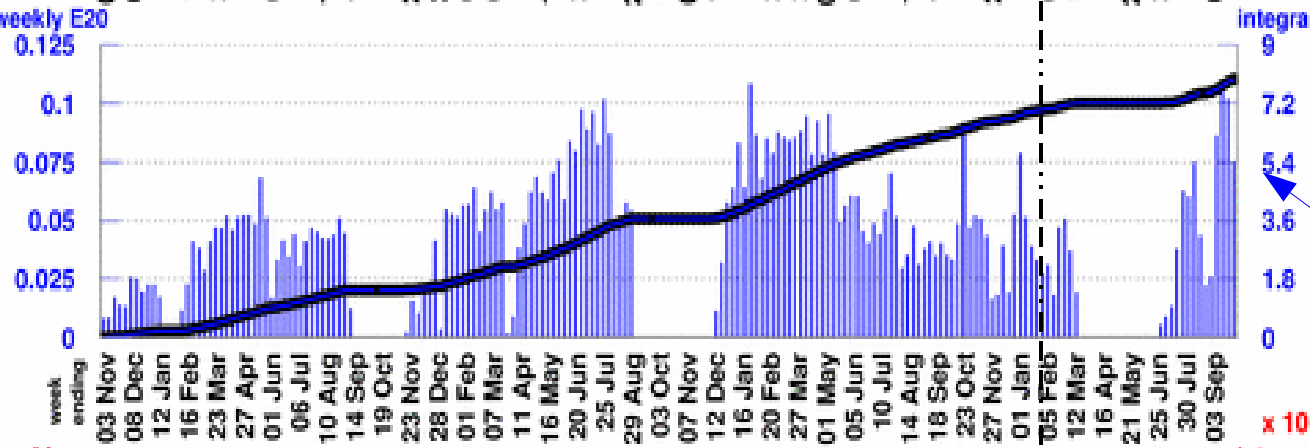
Number of Horn Pulses

To date: 195.14 million

Largest week: 2.46 million

Latest week: 1.67 million

With Beam Information Cuts



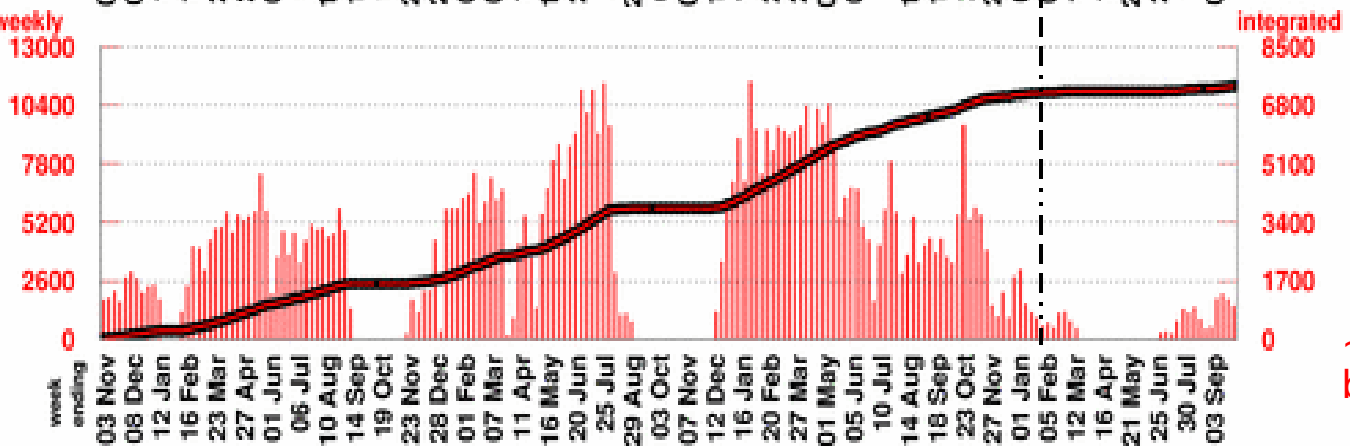
Number of Protons on Target

To date: 7.9285 E20

Largest week: 0.1085 E20

Latest week: 0.0747 E20

0.09E20 actual POT delivered



Number of Neutrino Events

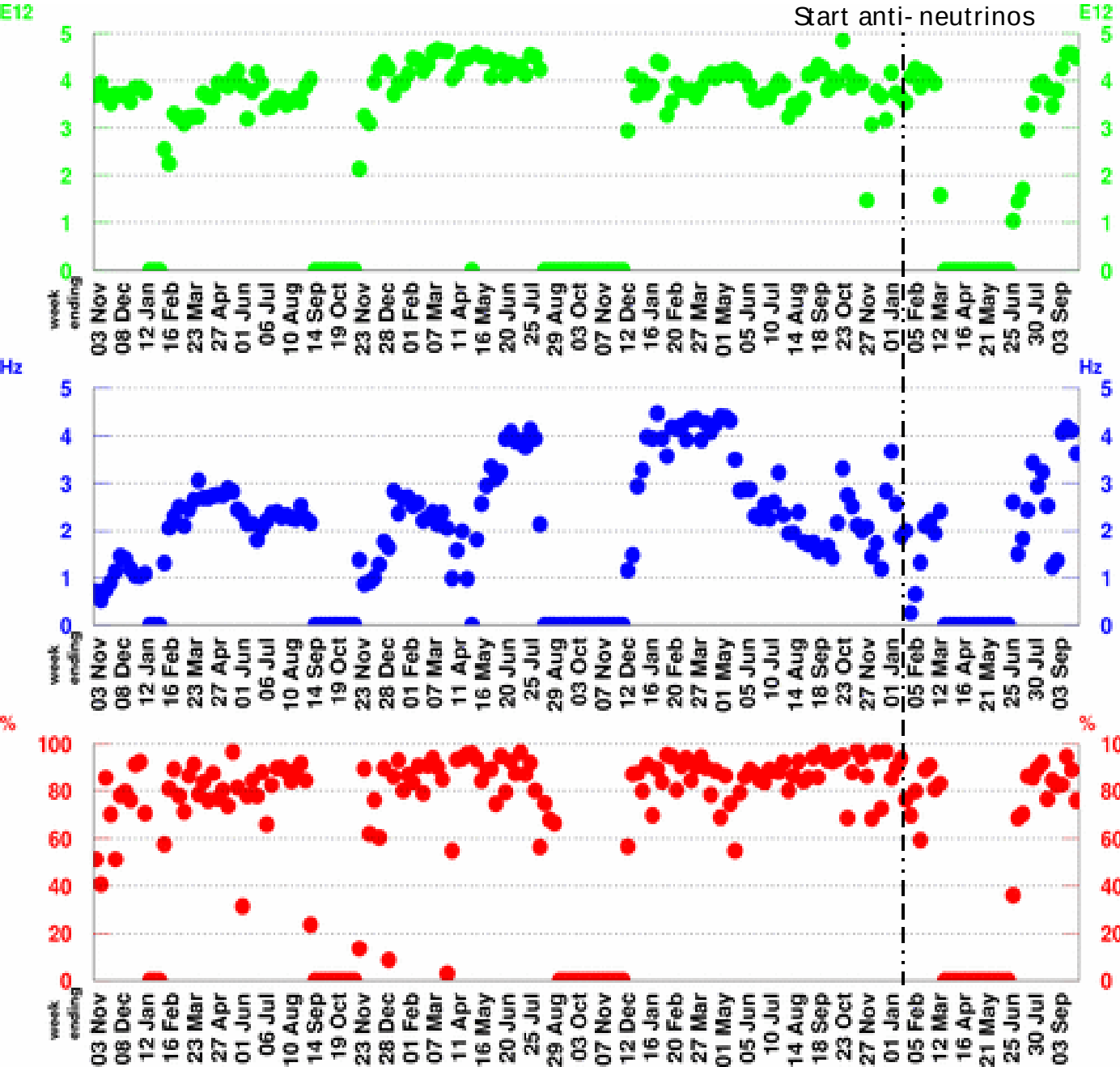
To date:735325

Largest week: 11447

Latest week: 1477

~190 neutrinos without beam info cuts still usable.

28 Aug – 11 Sept



POT per Horn Pulse

Largest week: 4.85 E12

Latest week: 4.48 E12

Horn Rate

(for time periods with beam)

Largest week: 4.48 Hz

Latest week: 3.63 Hz

Beam Uptime Fraction

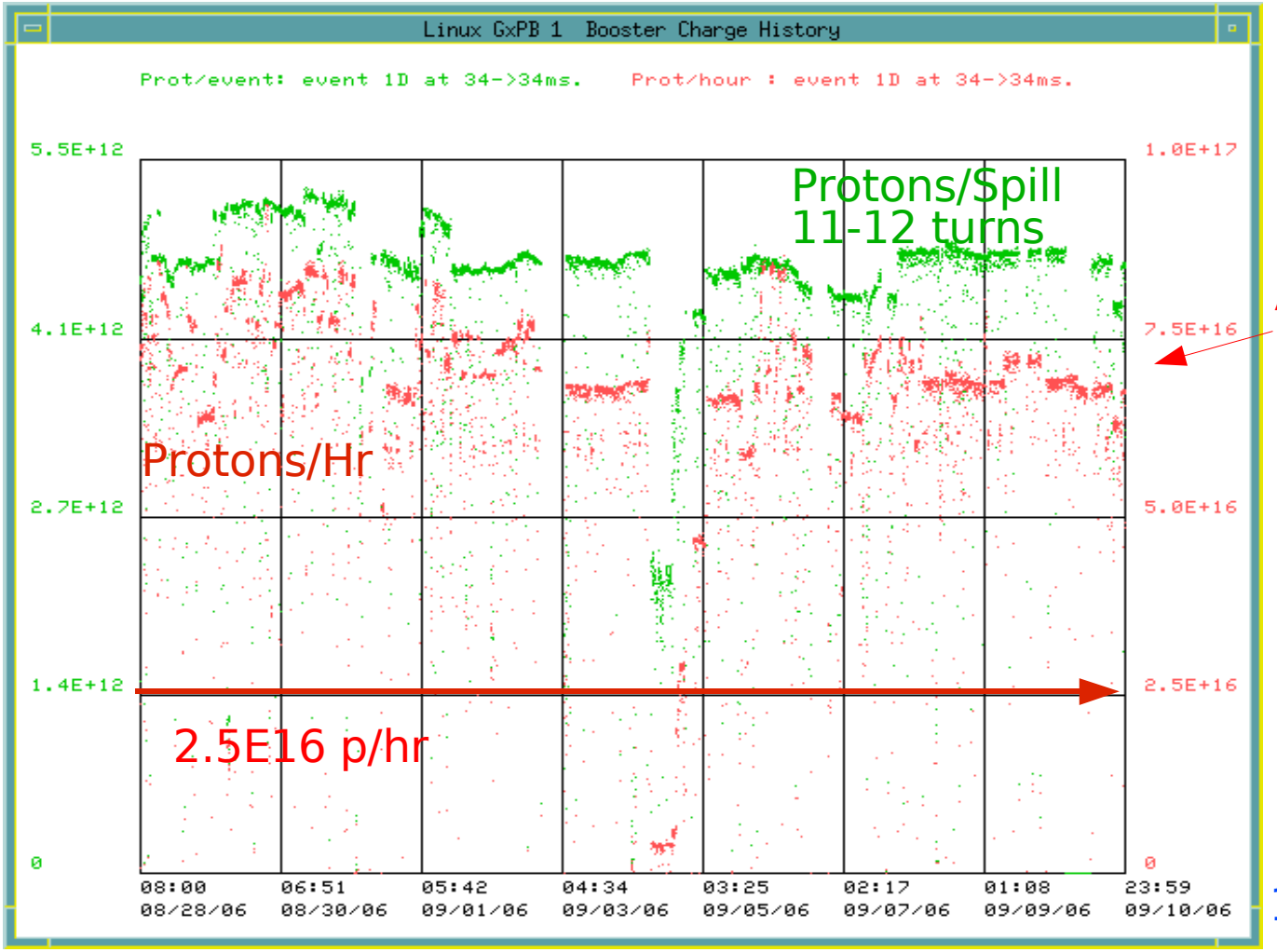
(fraction of time with beam)

Largest week: 97.4 %

Latest week: 75.9 %

89% actual beam uptime

Two Week MB Proton/Hr Summary



Averaging
~7E16 p/hr

28 Aug

11 Sept

Outstanding Linac/Booster running!

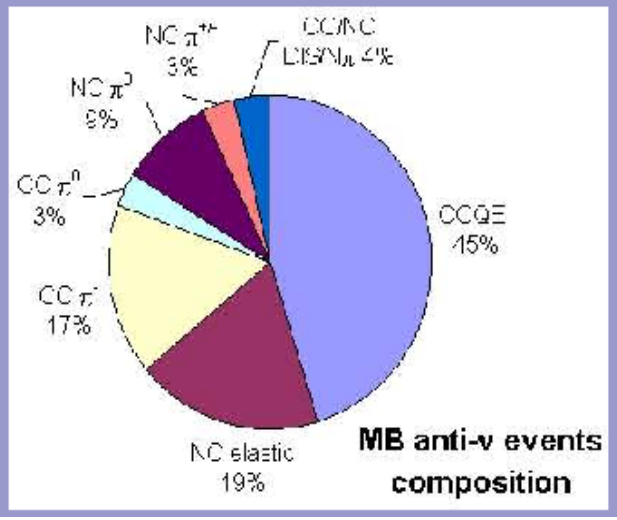
Antineutrino Scattering with MiniBooNE

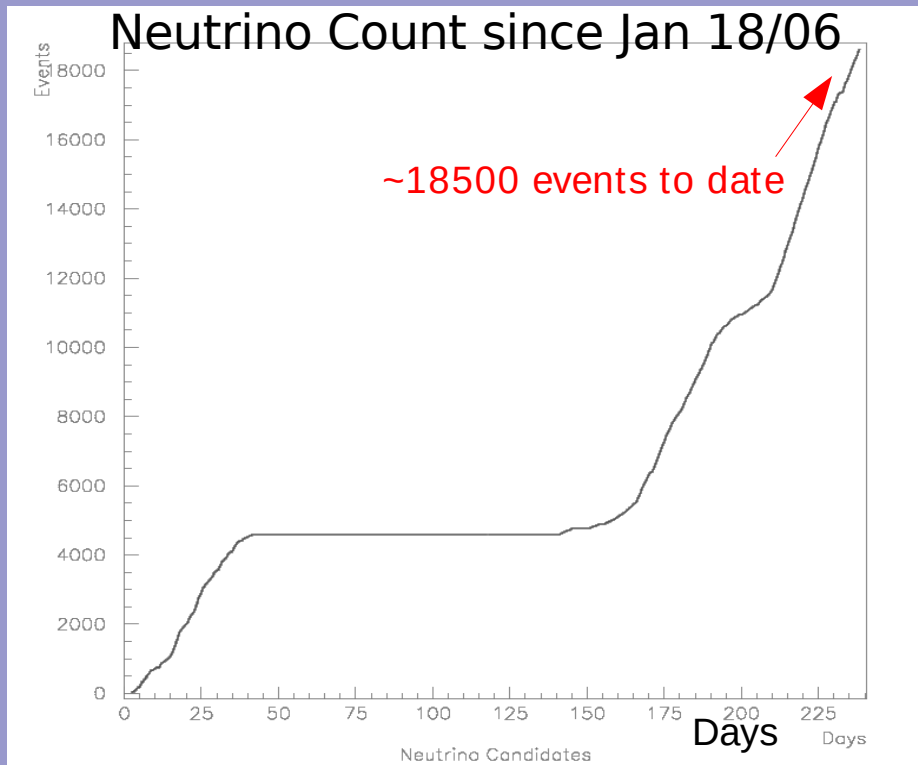
$\bar{\nu}$ events expected in next year:

- from 2E20 "protons-on-target" (POT)
- with fiducial radius of 500cm
- before cuts
- ν event (wrong-sign) contribution not included

$\bar{\nu}$ channel	events
all channels	54k
CC quasielastic	24k
NC elastic	10k
CC π^-	8.9k
CC π^0	1.7k
NC π^0	4.9k
NC $\pi^{+/-}$	1.8k

"CC" = charged current
"NC" = neutral current





0.94E20 POT collected so far....

2.5E16 Pr/Hr => 1.5E20 POT/yr

This Weeks Plan

- Try to maintain good uptime to take advantage of excellent beam.
- NuMI coming back online will significantly reduce current MB rate. However with recent improvements in Booster output can expect decent rates.
- Continue taking quality anti-neutrino physics data!