MiniBooNE Report

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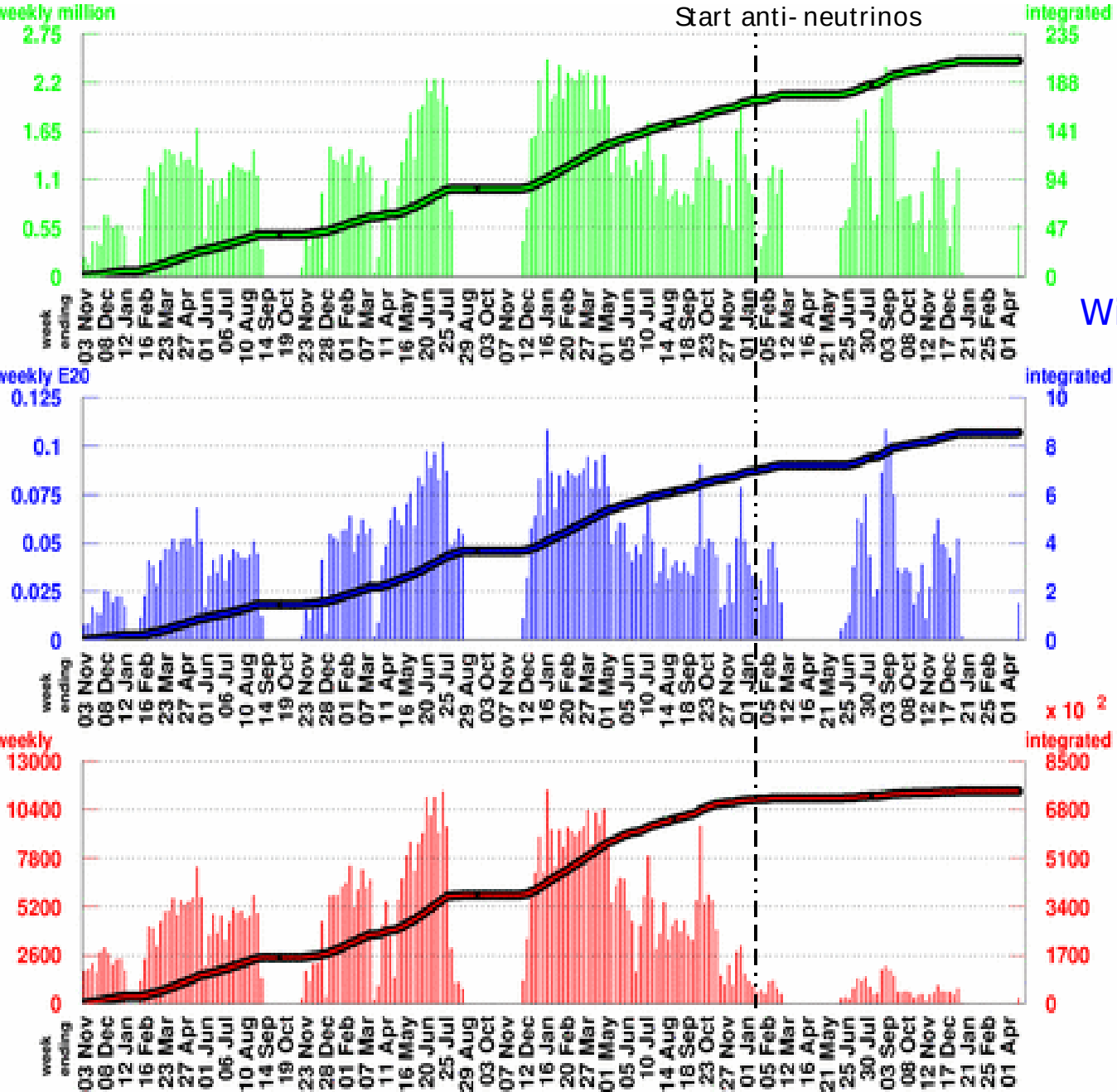
for the MiniBooNE collaboration

16 April 2006

Week Summary 09 April – 16 April 0.19E19 POT, 55% Uptime

- Back online after successful repair of 25m absorber region.
  - Operations begin Tuesday April 10.
- Booster delivering decent beam intensity, up to 9 turns by weekend.
- Major Downtime:
  - 12hrs: Booster RF repairs (April 11).
  - 4 hrs: Linac RF repairs(April 12).
  - 4 hrs: BPM problem (April 13).

09 April – 16 April



Number of Horn Pulses

To date: 209.22 million

Largest week: 2.46 million

Latest week: 0.59 million

With Beam Information Cuts

Number of Protons on Target

To date: 8.5557 E20

Largest week: 0.1085 E20

Latest week: 0.0191 E20

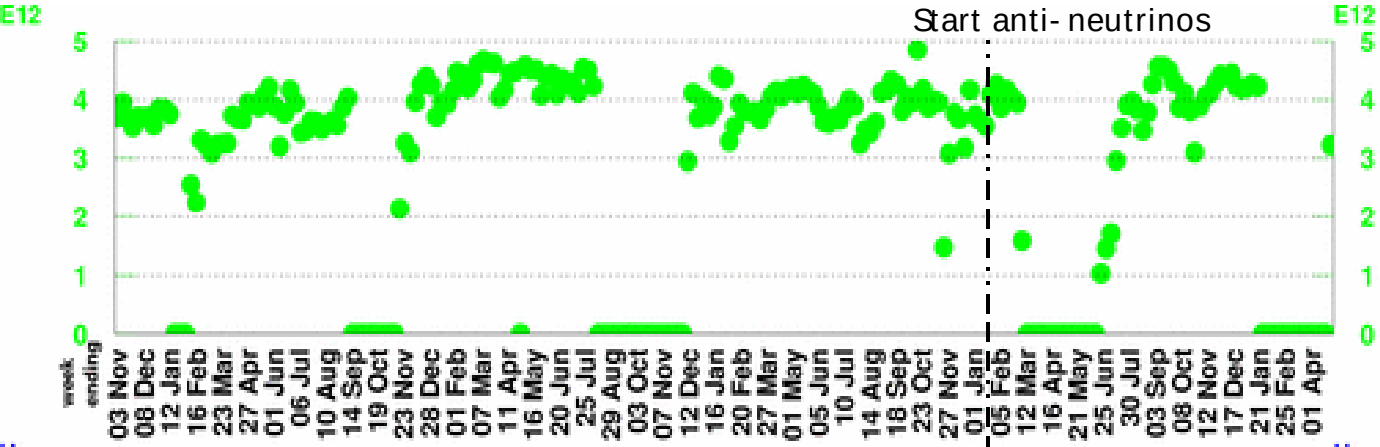
Number of Neutrino Events

To date: 744624

Largest week: 11447

Latest week: 315

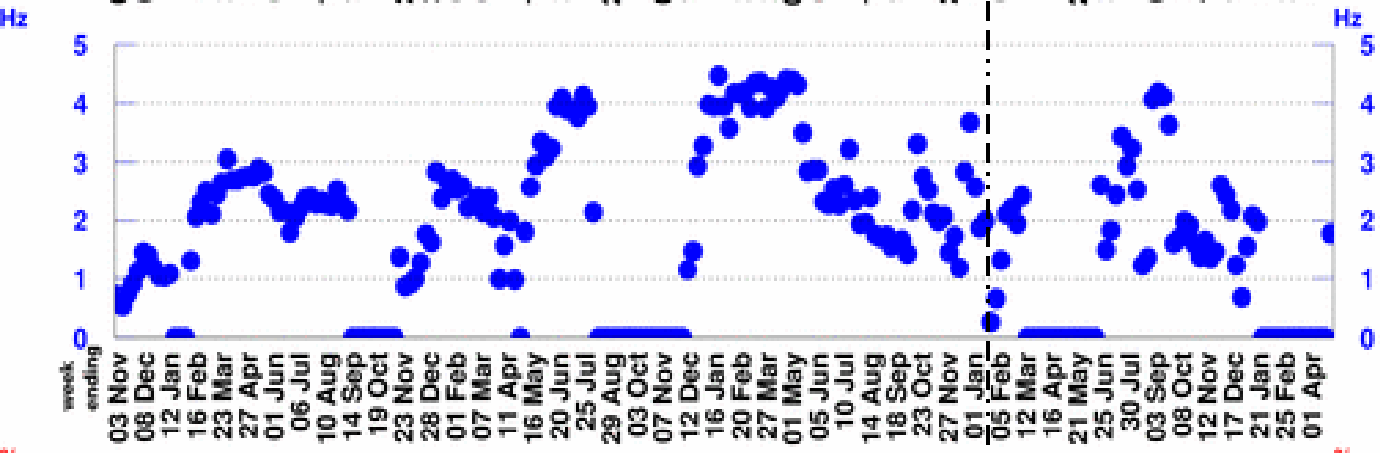
09 April – 16 April



POT per Horn Pulse

Largest week: 4.85 E12

Latest week: 3.22 E12

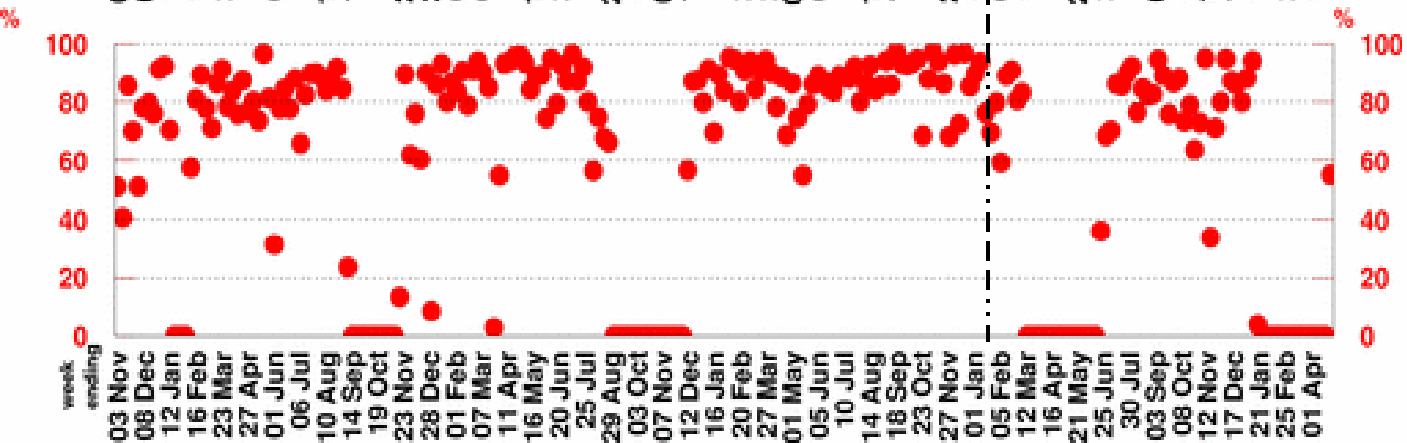


Horn Rate

(for time periods with beam)

Largest week: 4.48 Hz

Latest week: 1.78 Hz



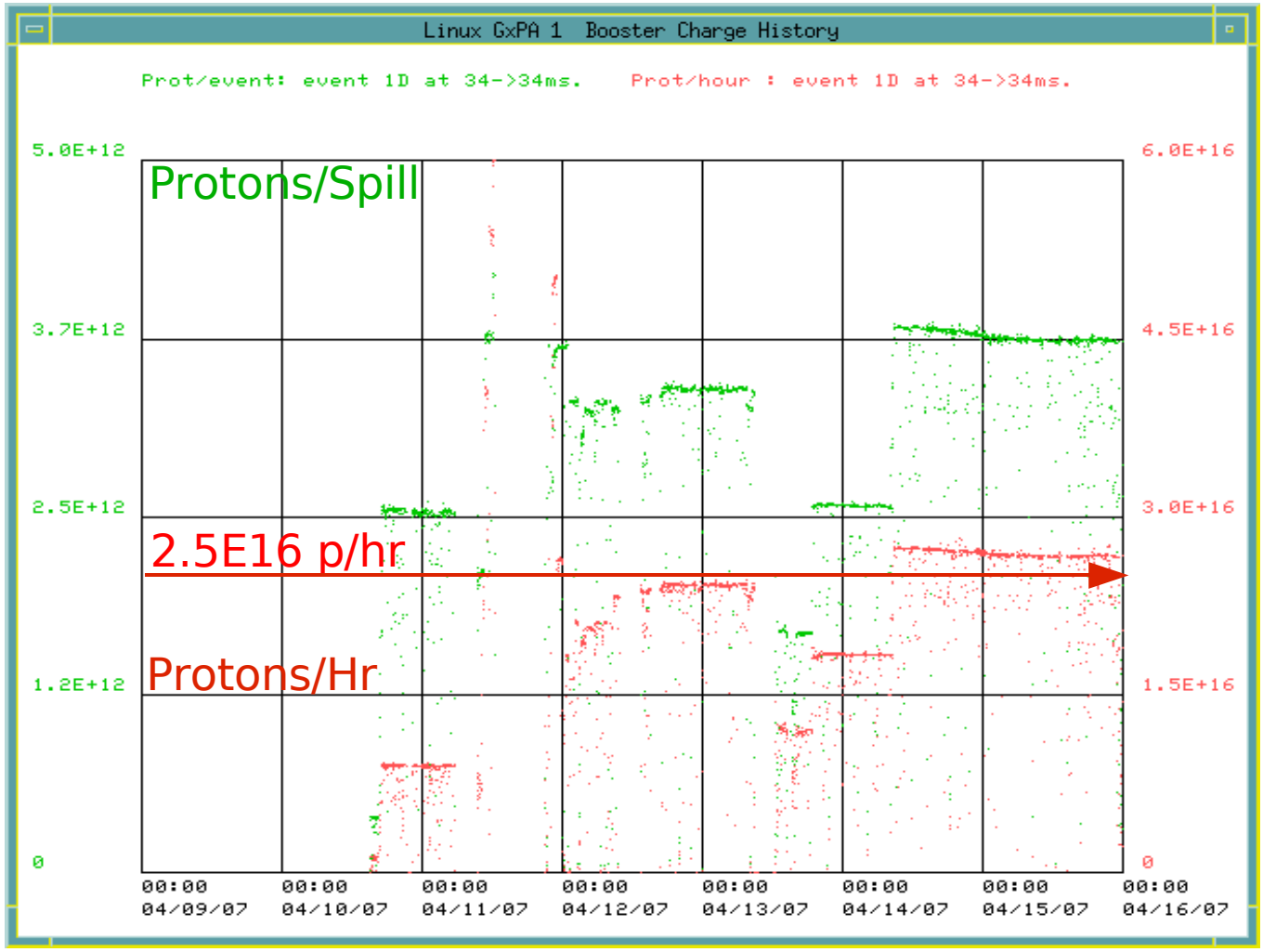
Beam Uptime Fraction

(fraction of time with beam)

Largest week: 97.4 %

Latest week: 55.2 %

One Week MB Proton/Hr Summary



09 April

16 April

Currently running steady at 9 turns and 87% Eff.

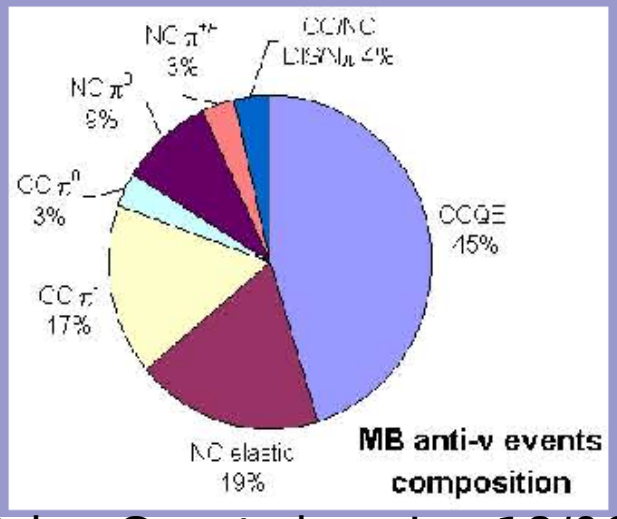
Antineutrino Scattering with MiniBooNE

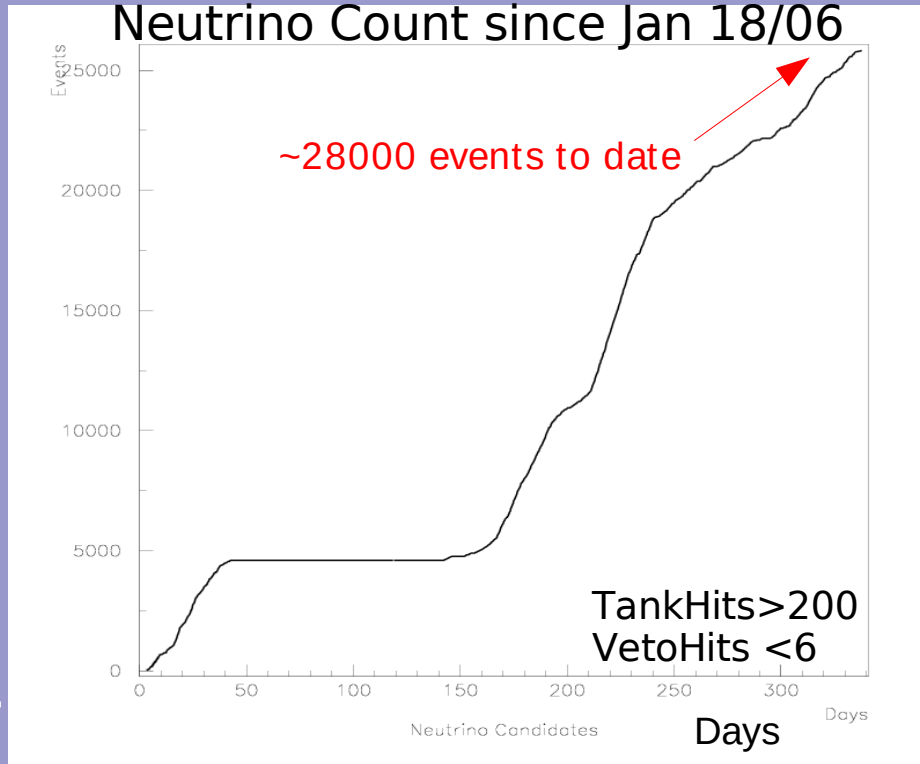
$\bar{\nu}$ events expected in next year:

- 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





1.57E20 POT collected so far....

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

Is the Problem Resolved?

- Problems turning on Little Muon Counter which monitors the decay pipe.
- Decay pipe Chipmunk rates back to pre-absorber problem level (normalized to p/hr).
- Preliminary neutrino rate of ~20 nu/1E17POT is consistent with pre-absorber problem rate of ~23 nu/1E17POT.

This Week's Plan

- Continue running...
- Plan is to collect 0.6-0.9E20 POT in antineutrino mode and no absorber. Totals to date:
  - 0.2E20 POT no absorber.
  - 0.7E20 POT absorber #10 down.
  - 0.6E20 POT absorber #10 and #7 down.
- Continue work on understanding antineutrino data, which looks promising!

Thanks!

- To accelerator division's, mechanical support, external beams, ES&H; PPD-mechanical, and TD-machine shop personnel for an outstanding job repairing 25m absorber!

Mike Andrews (AD) Joel Misek (AD) Patrick Hurh (AD) Dave Augustine (AD) Dan Snee (AD)

Charlie Cooper (TD) Debbie Cobb (AD) Larry Bradley (AD) John Featherstone (AD)

Jason Kubinski (AD) Morgan Carter (AD) Orlando Rivera (AD) Bob Albrecht (AD) Joel Fulgham (AD)

Mike Mascione (PPD) Chandler Sood (TD) Dave Erickson (PPD) Wojciech Blaszynski (PPD)

Lenny Harbacek (TD) Bill Koch (TD) Otto Alvarez (PPD) Ed Hagler (TD) Gary Markiewicz (TD)

Phil Cowan (TD) Mike Berens (TD) Jim Kilmer (PPD) Tom Nicol (TD) Russ Alber (FESS-ENG)

Tom Kobilarcik (AD) Roger Zimmerman (AD) John Anderson (AD) Mike Gerardi (AD)