MiniBooNE Report

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for the MiniBooNE collaboration

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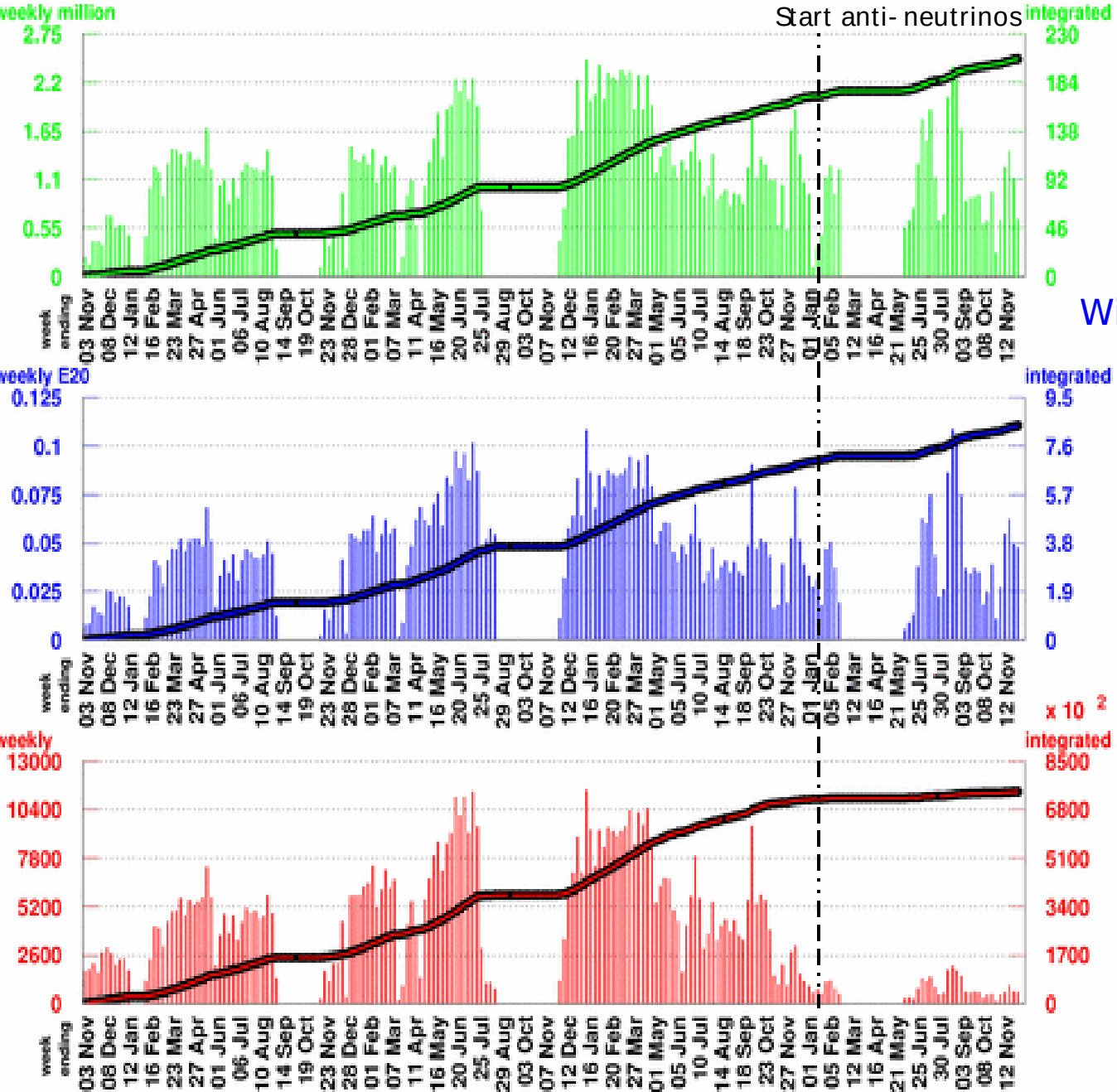
Week Summary 04 Dec – 11 Dec 0.48E19 POT, 86% Uptime

- Good POT week, good month!
  - Last four weeks around 5E18POT/week with NuMI running. Two times better than previous running.
- Started horn off running (Dec 7); systematics study.
- Major Downtime:
  - 6 hrs, switch to H- source (Dec 7).
  - 6 hrs, MI controlled access (Dec 8).
  - 2 hrs, LRF5 problems (Dec 9).

04 Dec – 11 Dec



Number of Horn Pulses

To date: 206.22 million

Largest week: 2.46 million

Latest week: 0.66 million

With Beam Information Cuts

Number of Protons on Target

To date: 8.406 E20

Largest week: 0.1085 E20

Latest week: 0.0478 E20

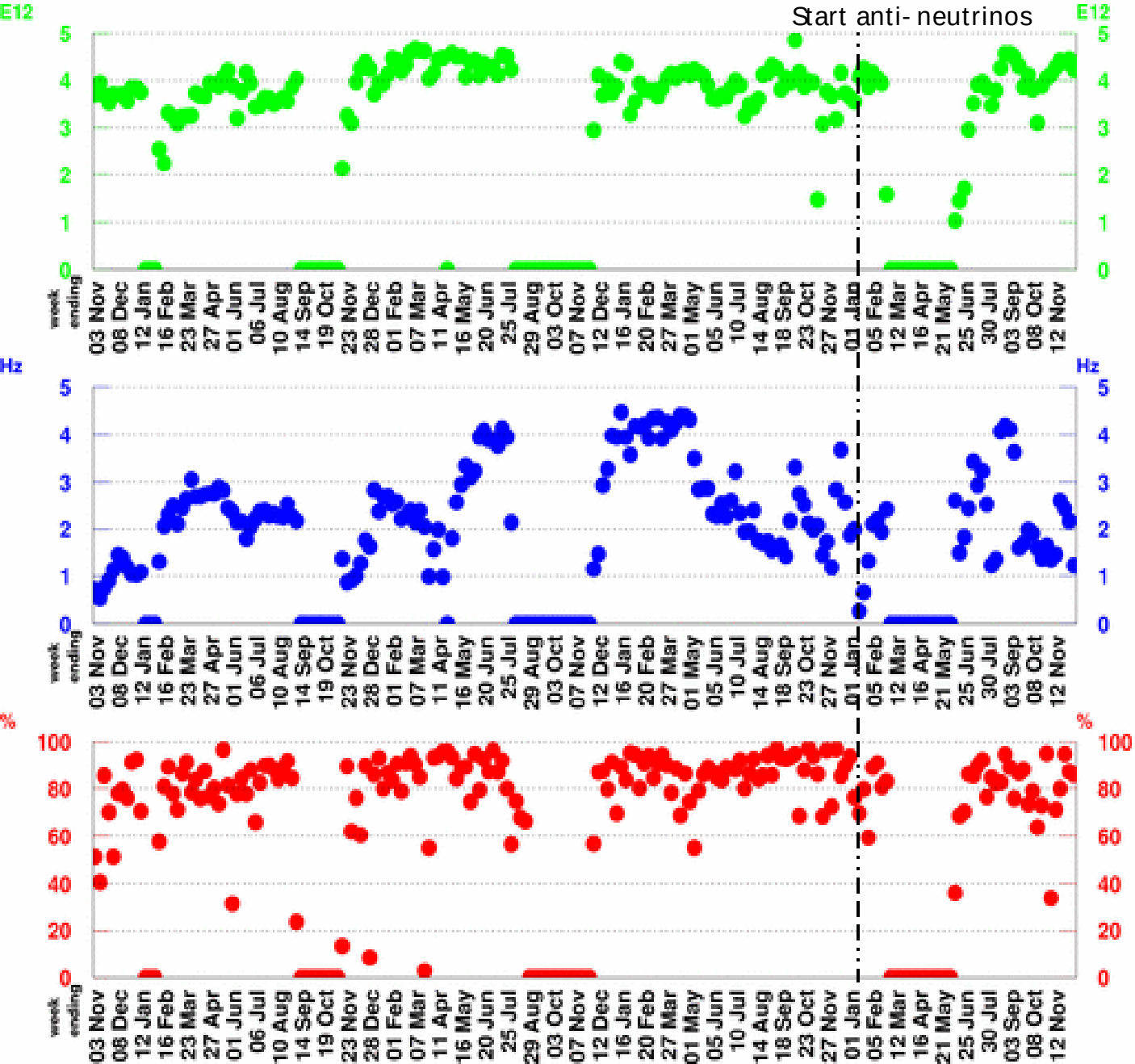
Number of Neutrino Events

To date:742379

Largest week: 11447

Latest week: 619

04 Dec – 11 Dec



POT per Horn Pulse

Largest week: 4.85 E12

Latest week: 4.23 E12

Horn Rate

(for time periods with beam)

Largest week: 4.48 Hz

Latest week: 1.24 Hz

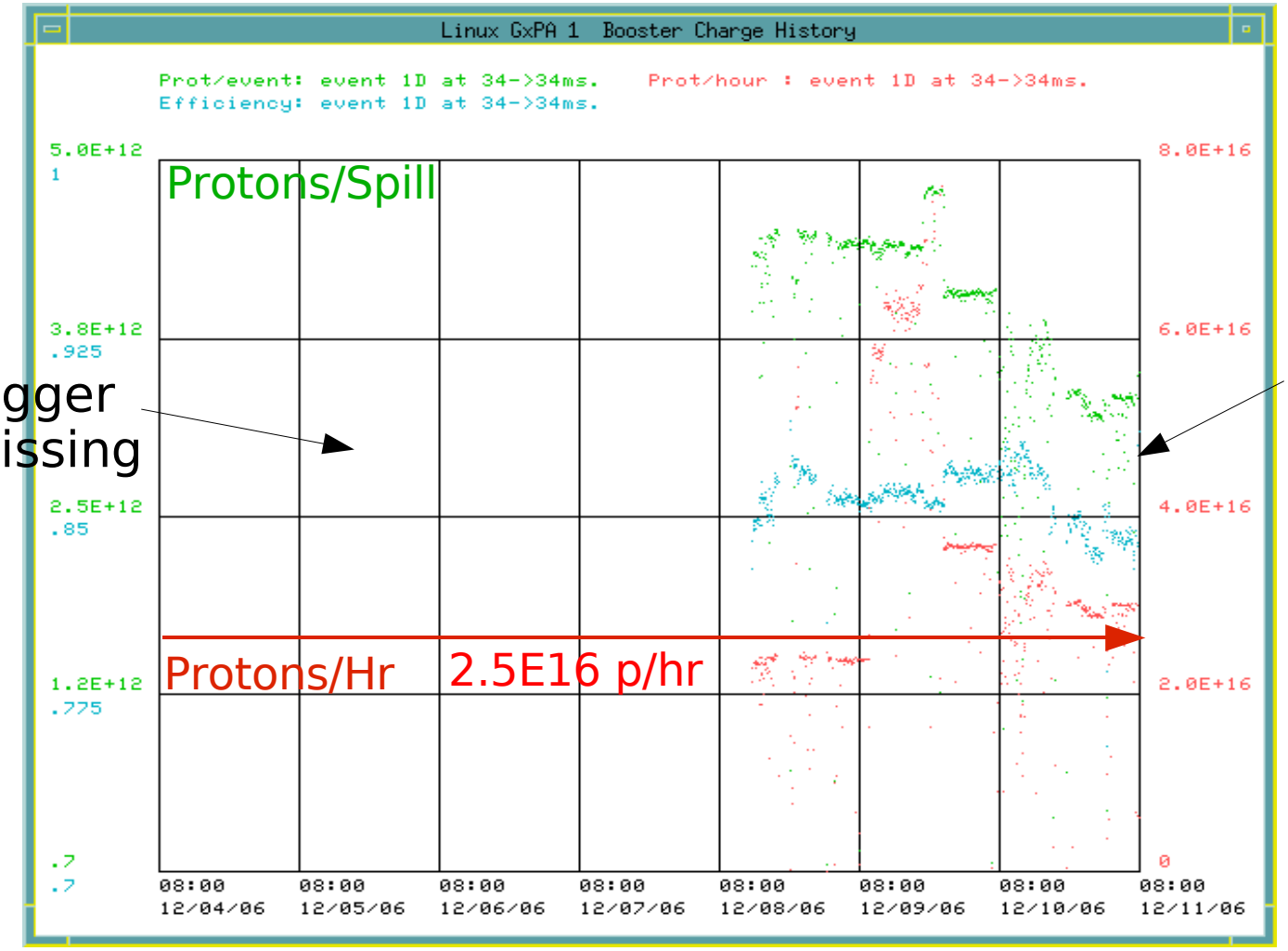
Beam Uptime Fraction

(fraction of time with beam)

Largest week: 97.4 %

Latest week: 86.1 %

One Week MB Proton/Hr Summary



DataLogger data missing

High Eff. ~87%

04 Dec

11 Dec

Running at 10-11 turns, high efficiency.

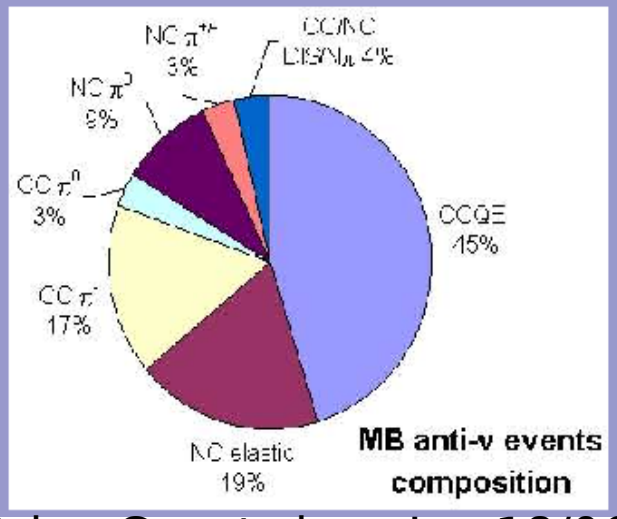
Antineutrino Scattering with MiniBooNE

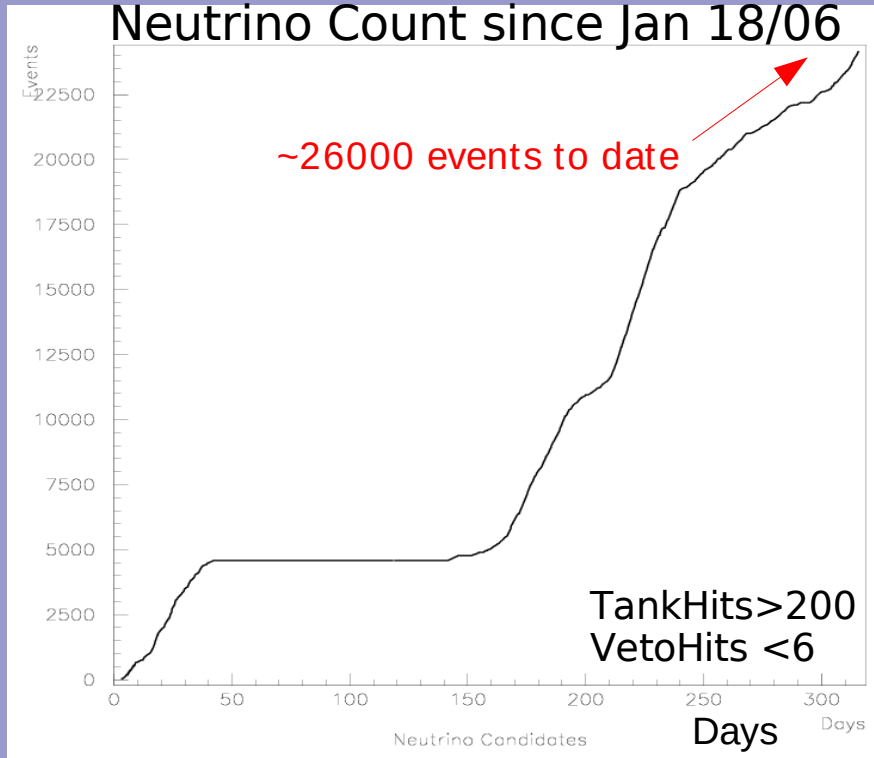
$\bar{\nu}$ events expected in next year:

- 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





1.4E20 POT collected so far....

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

Horn Off Running.

- We have observed ~25% drop in event rate during anti-neutrino running.
- No smoking gun as to source of problem.
- Through process of elimination, most likely a change in the target.
- Horn off running will provide valuable information, i.e. compare rates to previous horn off running.
- Need ~1 week to get enough statistics.

This Week's Plan

- Finish horn off running this week.
- This Wednesday dry run of MI12 power outage in preparations for SciBooNE power tie-in on Dec 19th.
- Maintain high uptime to take advantage of good Booster output.