MiniBooNE Report

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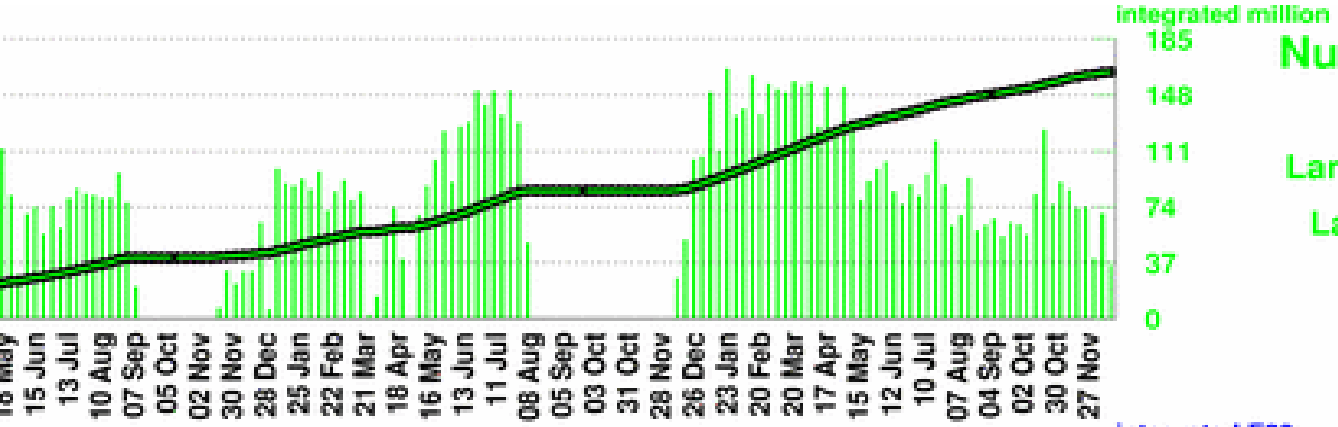
for the MiniBooNE collaboration

05 December 2005

28 Nov – 05 Dec Summary
Beam Uptime 73%
1.9E18 POT Delivered

- Detector running well, ~100% livetime.
- Beam downtime:
  - 5 hrs, Linac power supply (28 Nov).
  - 22 hrs, Booster RF19 installation, water leak (29 Nov).
  - 5 hrs, water leak in Booster (03 Dec).
  - 4 hrs, vacuum leak (03 Dec).
- 1/2 current horn running since Nov 16.

28 Nov – 05 Dec

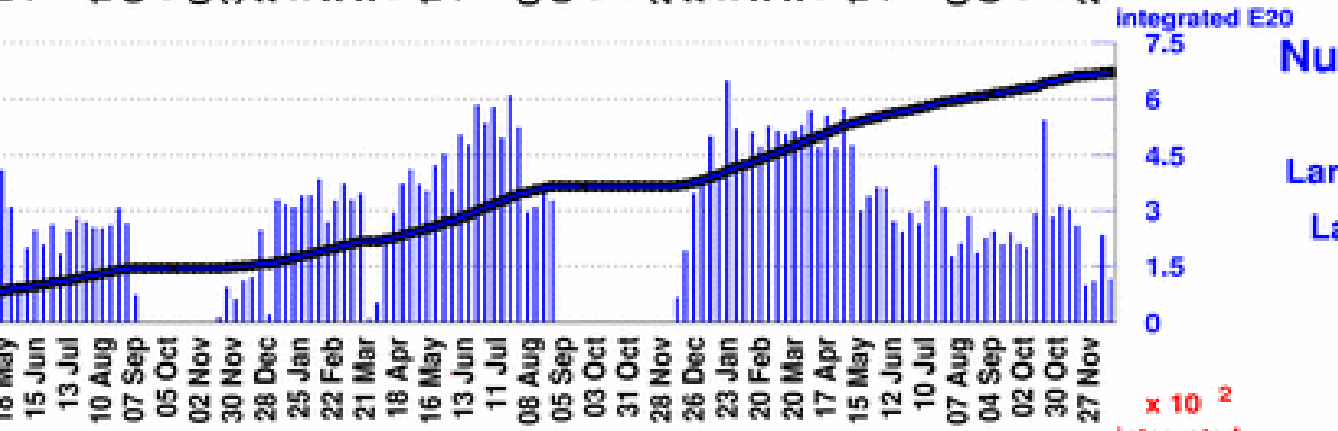


Number of Horn Pulses

To date: 163.57 million

Largest week: 2.46 million

Latest week: 0.53 million

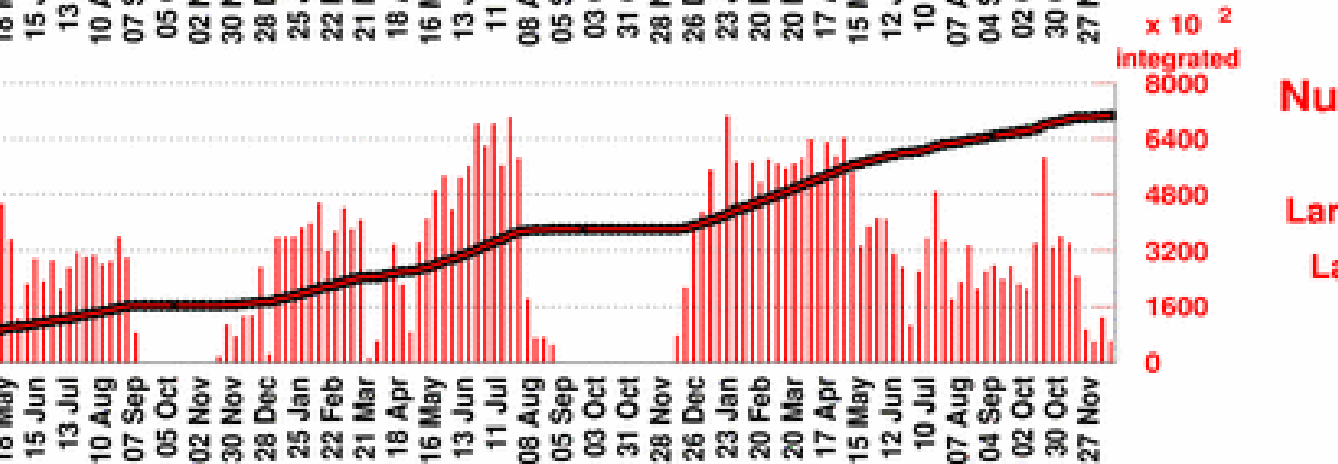


Number of Protons on Target

To date: 6.7179 E20

Largest week: 0.1084 E20

Latest week: 0.0194 E20



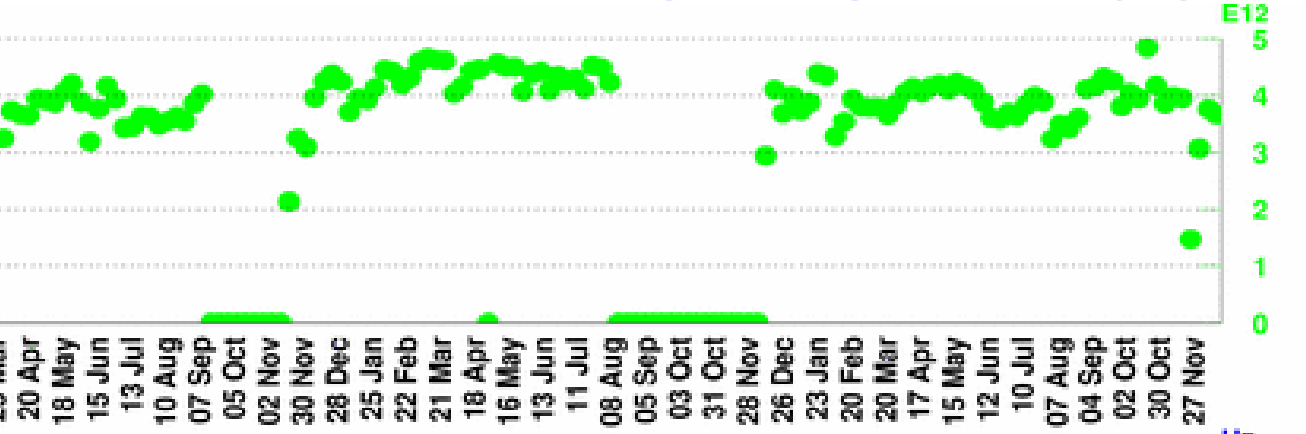
Number of Neutrino Events

To date:705465

Largest week: 11447

Latest week: 939

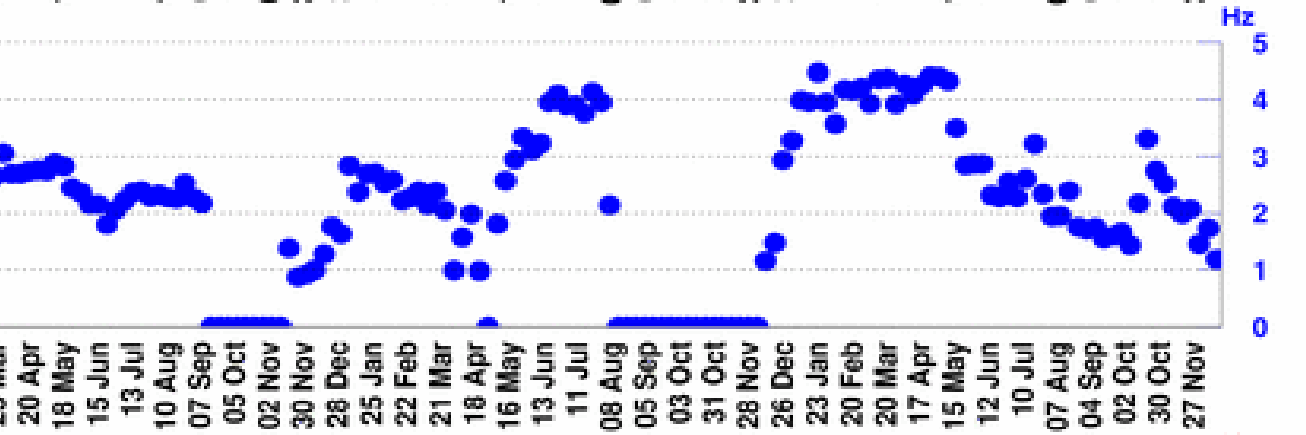
28 Nov – 05 Dec



POT per Horn Pulse

Largest week: 4.85 E12

Latest week: 3.67 E12

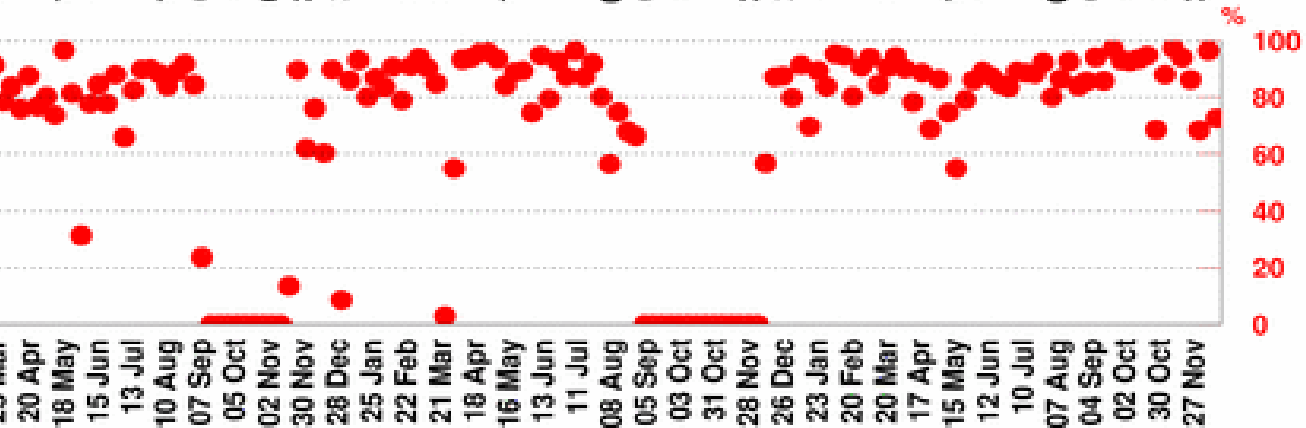


Horn Rate

(for time periods with beam)

Largest week: 4.48 Hz

Latest week: 1.19 Hz



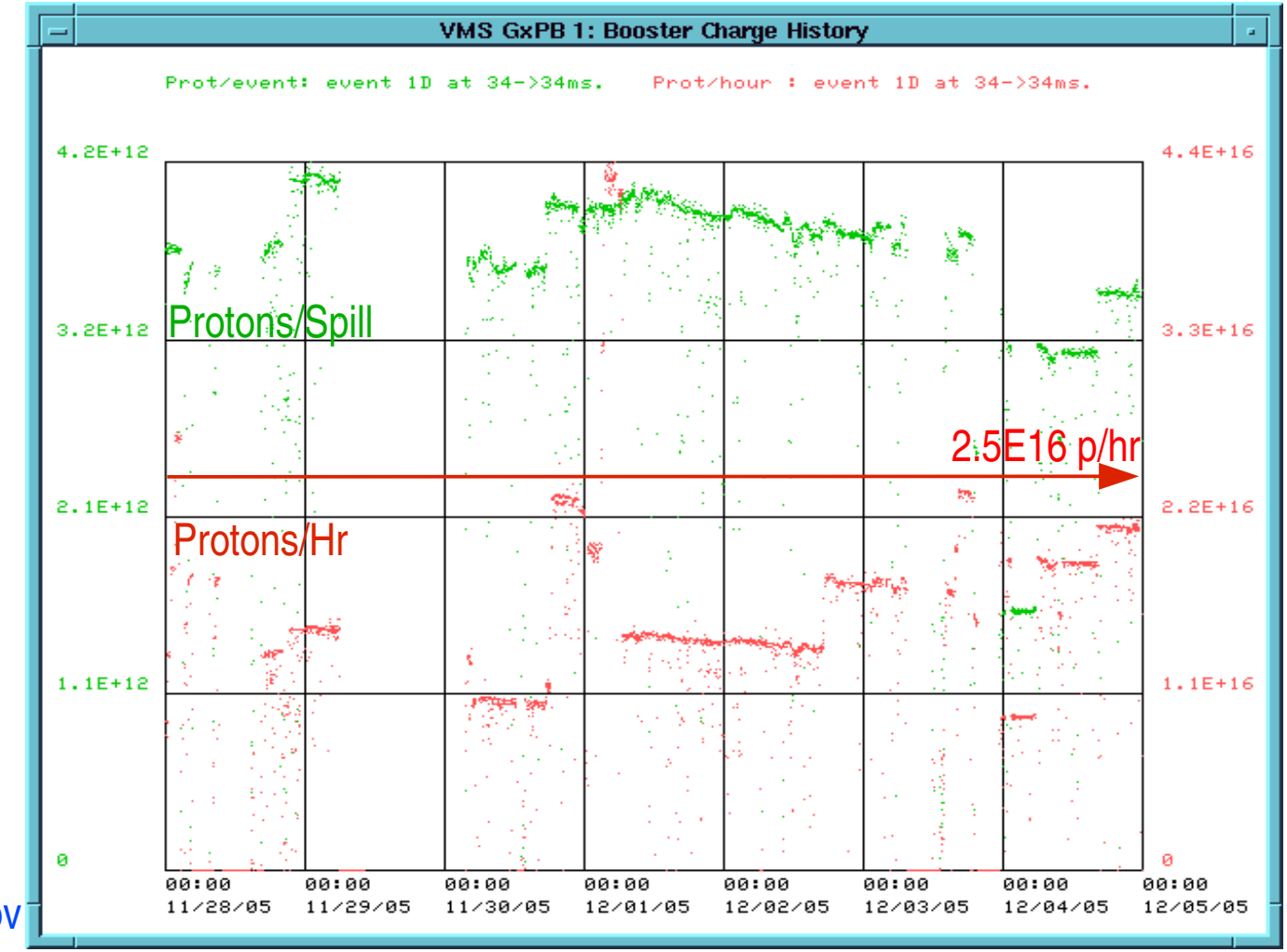
Beam Uptime Fraction

(fraction of time with beam)

Largest week: 97.4 %

Latest week: 72.5 %

One Week Proton/Hr Summary



28 Nov

05 Dec

Horn current at ½ nominal, low POT to MiniBooNE

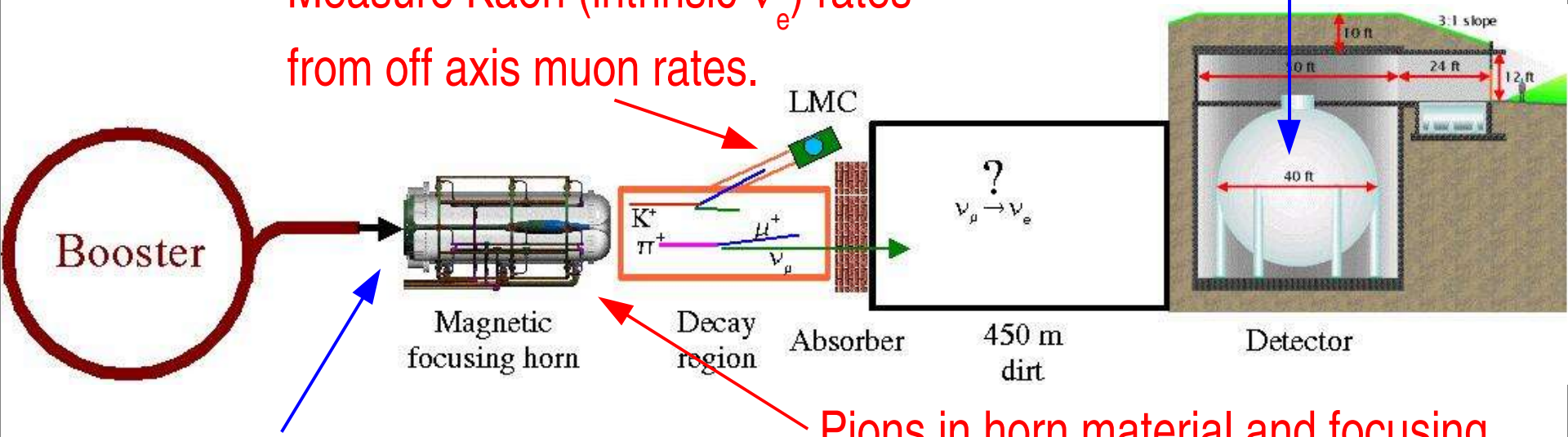
Summary, Plan of the Week

- Continuing systematic ½ horn current run for another ~4 weeks to get sufficient statistics.
- One day of LMC low intensity runs (1 turn), with 50% horn current.
- Important to get as much quality beam as possible during this systematic run period.
- Why do we need systematic runs?

Systematic Runs Overview:

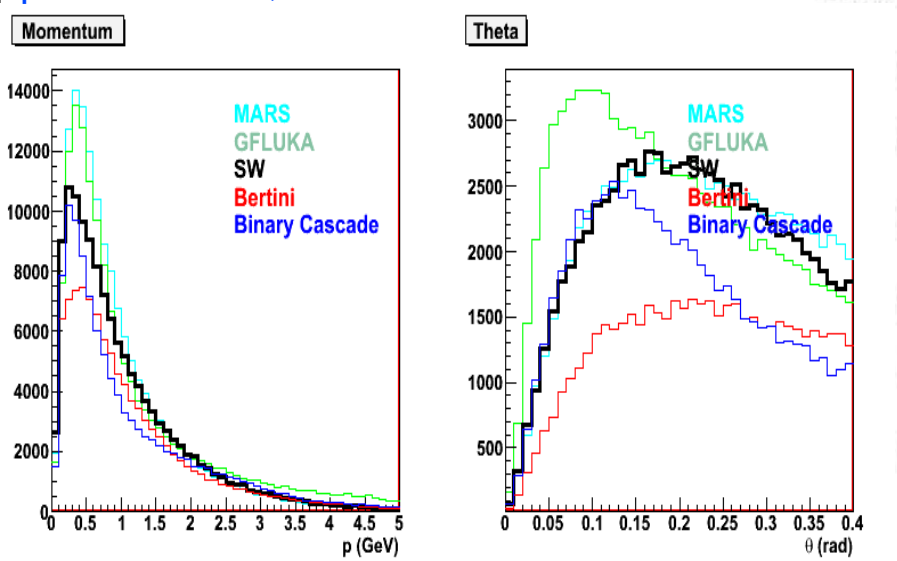
Neutrino Cross Sections:
->CC, CCpi+, CCpi0 interactions.
Detector response.

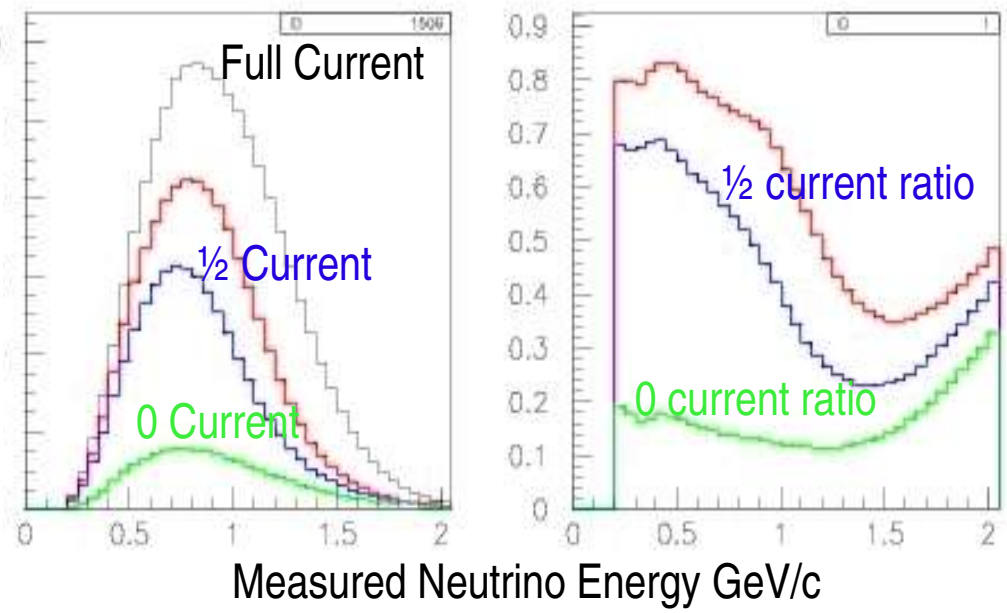
Measure Kaon (intrinsic ν_e) rates from off axis muon rates.



Pions in horn material and focusing.

p+Be -> π + X, measured from HARP and E910.





Systematic Runs Schedule

- Nov 16, Horn ½ current running: need ~10000 events to achieve ~5% errors per energy-bin.
  - Currently have 3000 events, ~1200 per week.
  - Need 1800 per week to reach goal!
- Jan 3, 2006 Horn Polarity Switch.
- Two weeks power supply switch, take ~1000 horn off events (already have 2500 events).
- ~4500 anti-neutrinos (neutrino rate check).
- March 1, 2006 Shutdown.