MIPP Status

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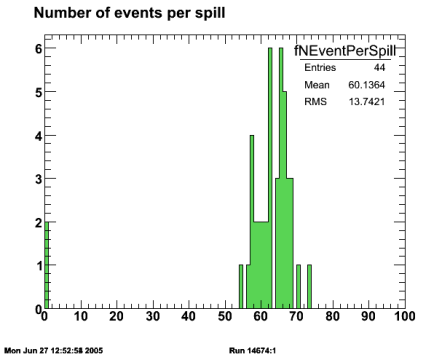
Fermilab All Experimenters' Meeting

6/27/05

- Statistics
- Beam issues
  - Beam size
  - Impact on data taking
  - SWICs
- Detector status

MIPP event statistics

- Data was taken on the NuMI target with protons at +120 GeV/c
  - Data rate was ~100 events per 4 seconds with 20% beam triggers
  - Data rate dropped to ~ 65 events per 4 seconds with NuMI only triggers (e.g. 68 Hz averaged over the weekend)
- Total to date:
  - 4219 spills with beam in 6 days 16:11:53 run time
  - 238216 NuMI triggers + 62994 beam triggers
- Last week only:
  - 2794 spills with beam in 4 days 13:16:25 run time (65%)
    - 1 spill per 2 minutes would give 3278 spills, 278 spills were empty
  - 167199 NuMI triggers + 5080 beam triggers
    - 167199 events / 2794 spills = 60 events per spill on average
      - Part of the running had low beam intensity



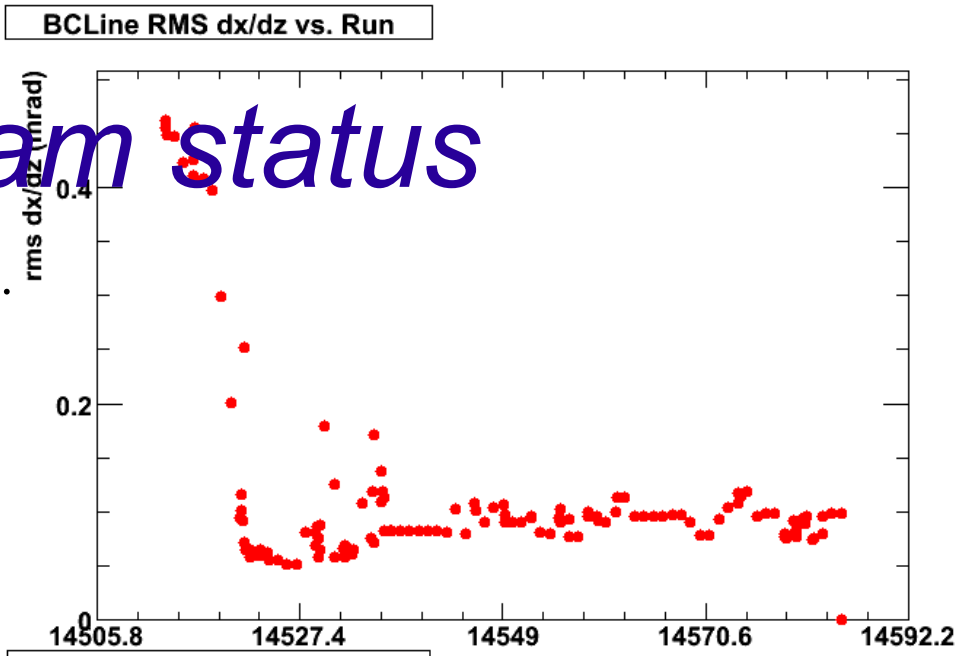
MIPP event statistics

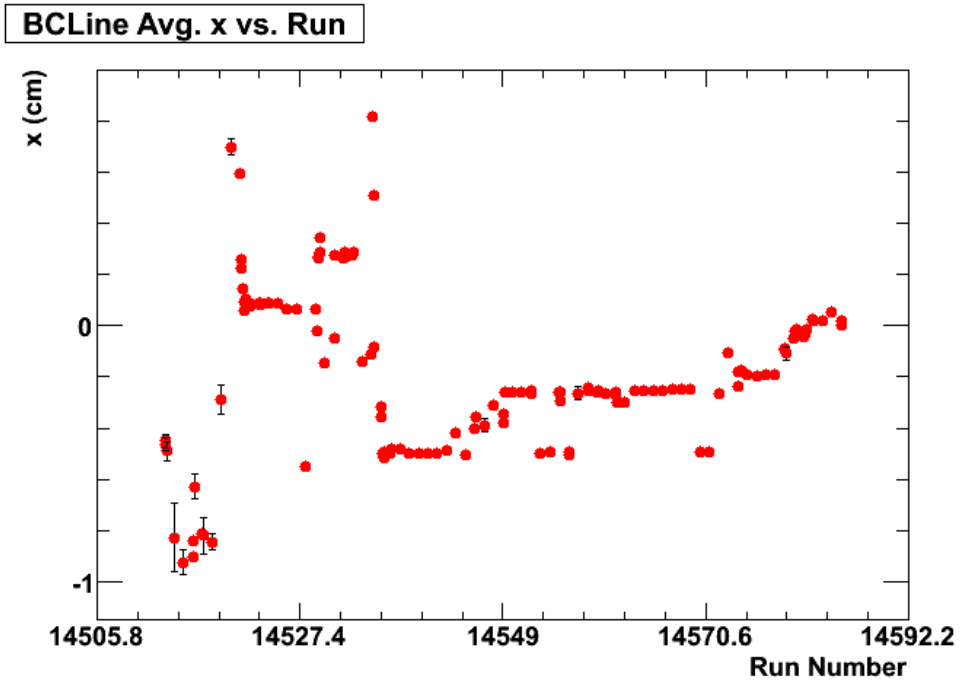
- At 1 spill per 2 minutes:
  - Take approximately 175,000 events per week (~25k per day)
  - NuMI goal of 2,000,000 events is impossible to reach (or even come close to)
- MIPP could double the data set with 1 spill per 1 minute
  - We would take ~350,000 events per week (50k per day, 1.5million per month)
  - This would at least be close to what NuMI needs

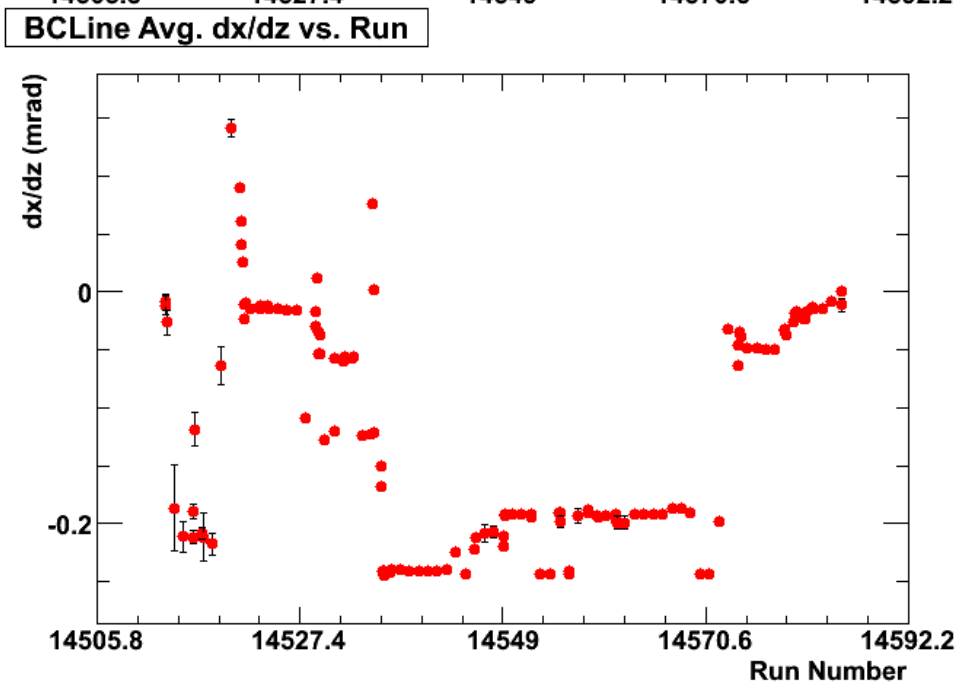
- Please give MIPP more spills!
  - And please do it soon!

MIPP beam status

- The beam size on the NuMI target is ~1cm.
  - The MIPP trigger for the NuMI target selects beam particles in a small spot to reproduce the NuMI beam (1mm size)



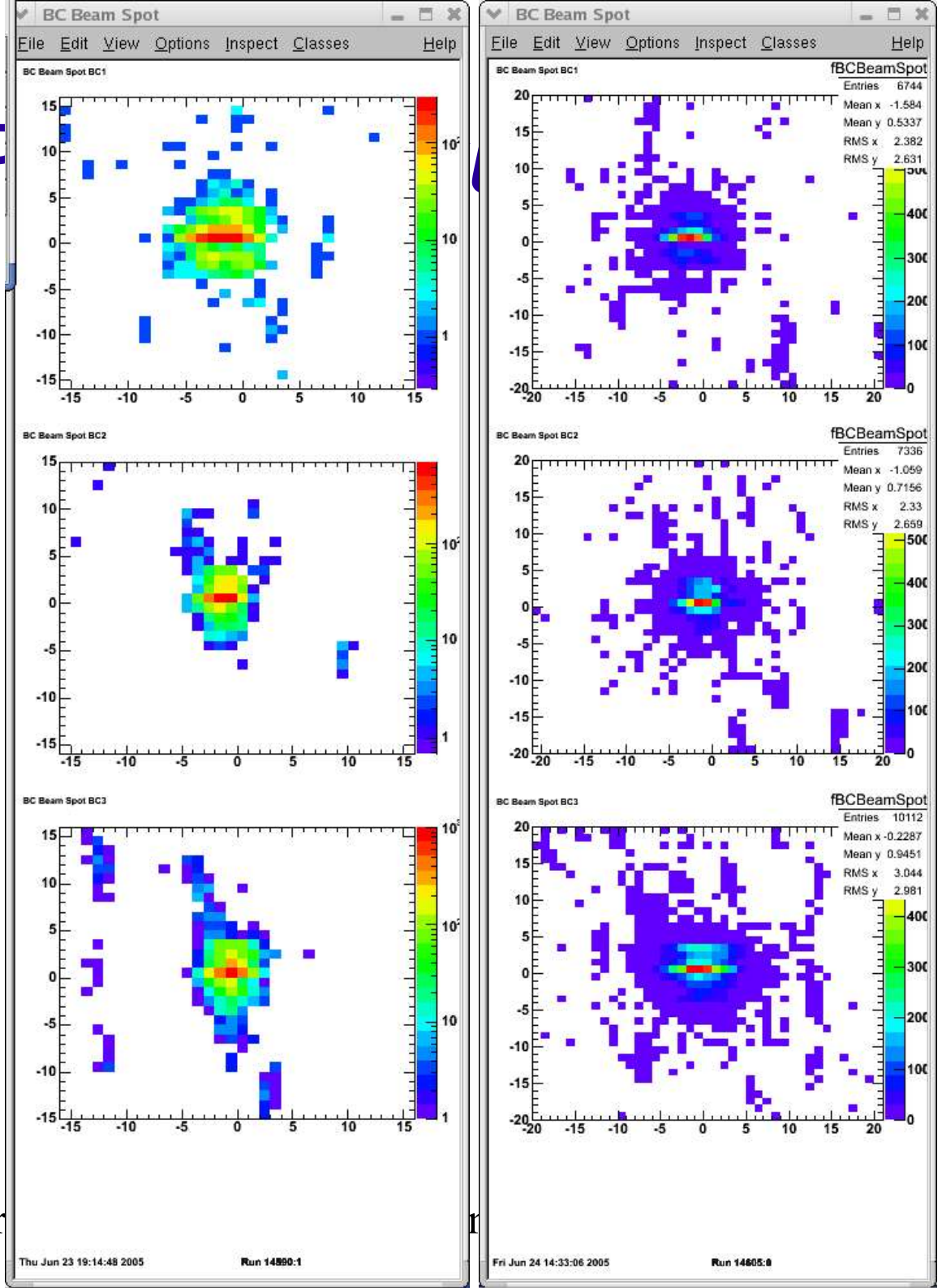




MIPP

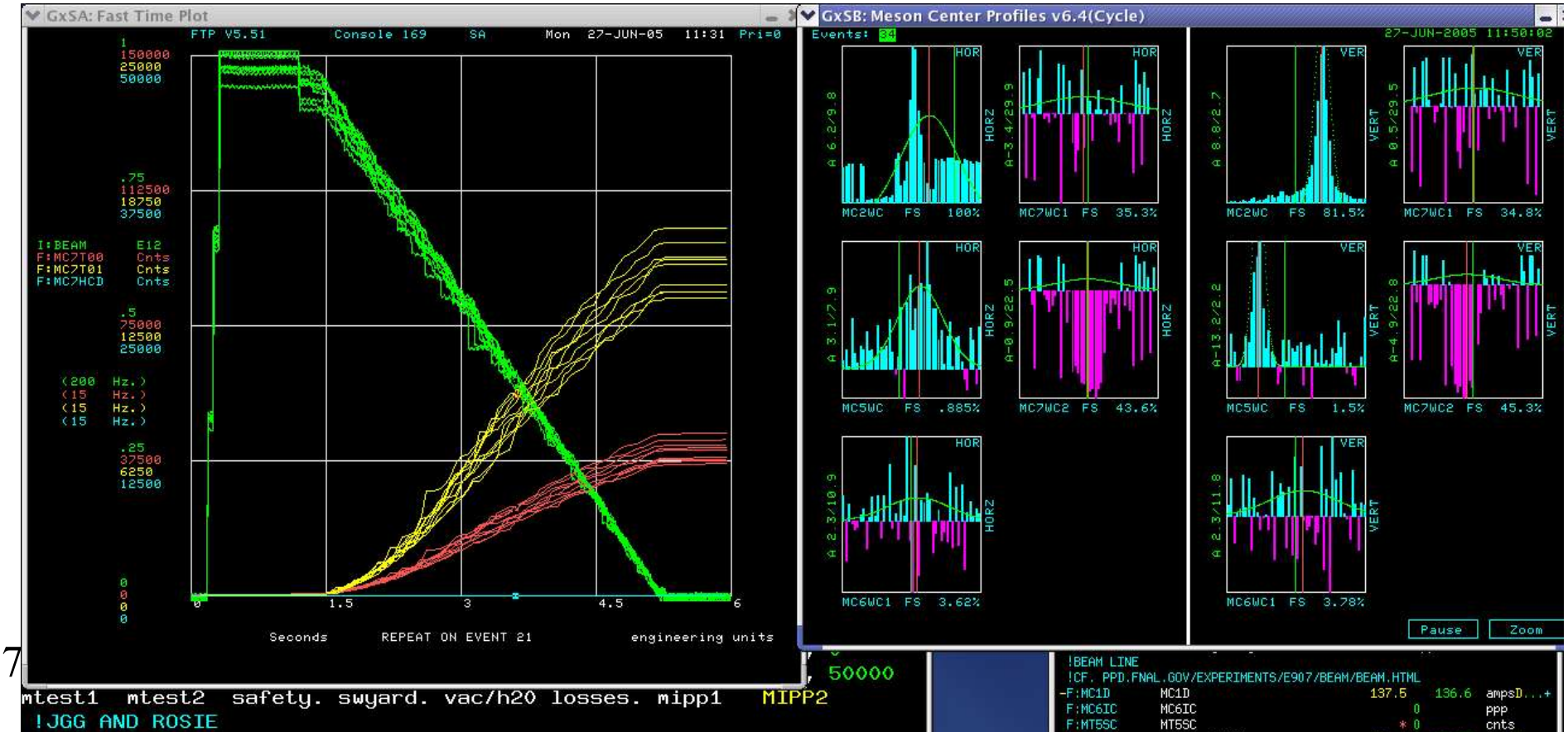
- MIPP is providing Beam Chamber information to MCR for tuning:

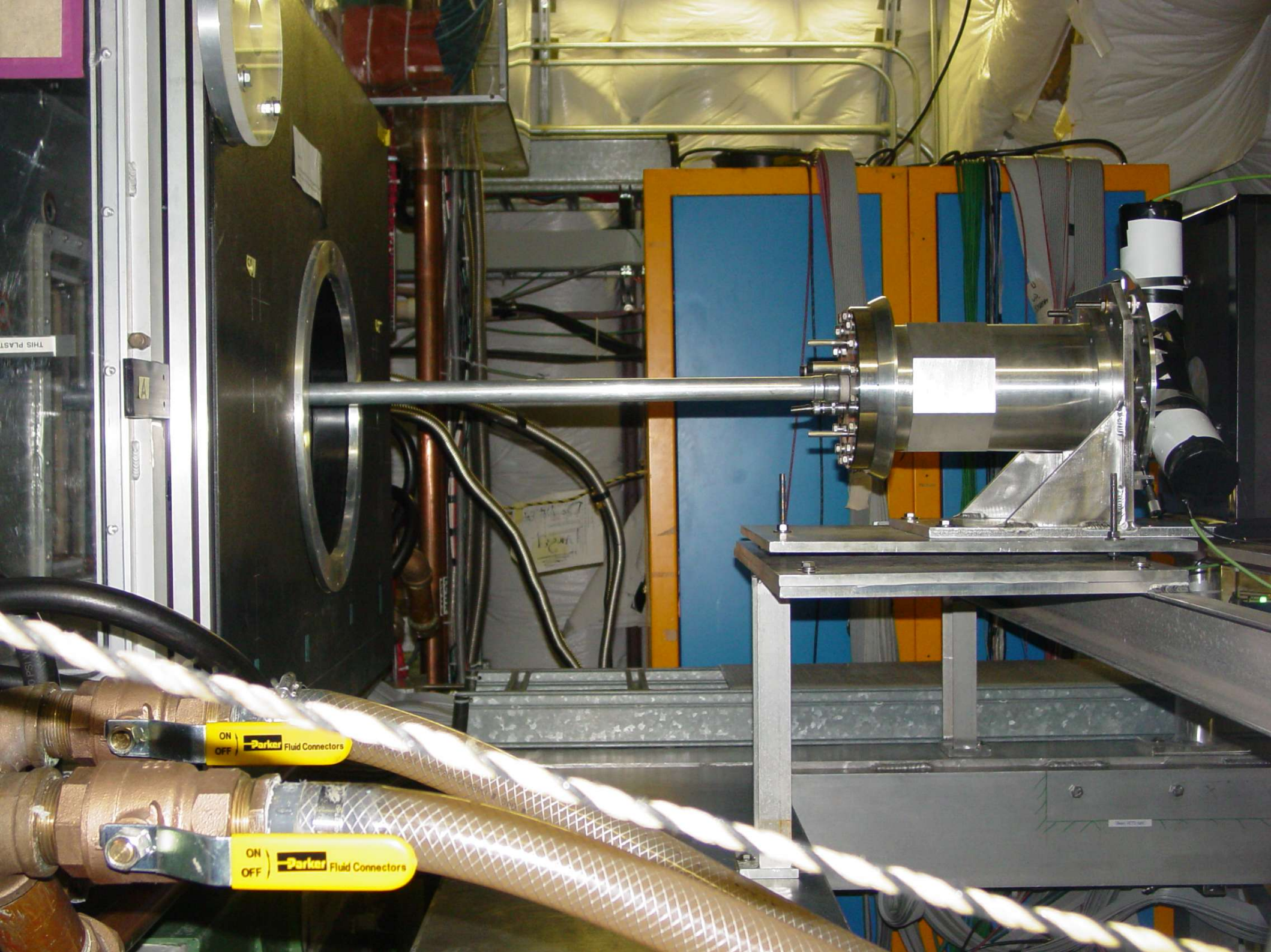
  Redundance for MC7WC1 and 2

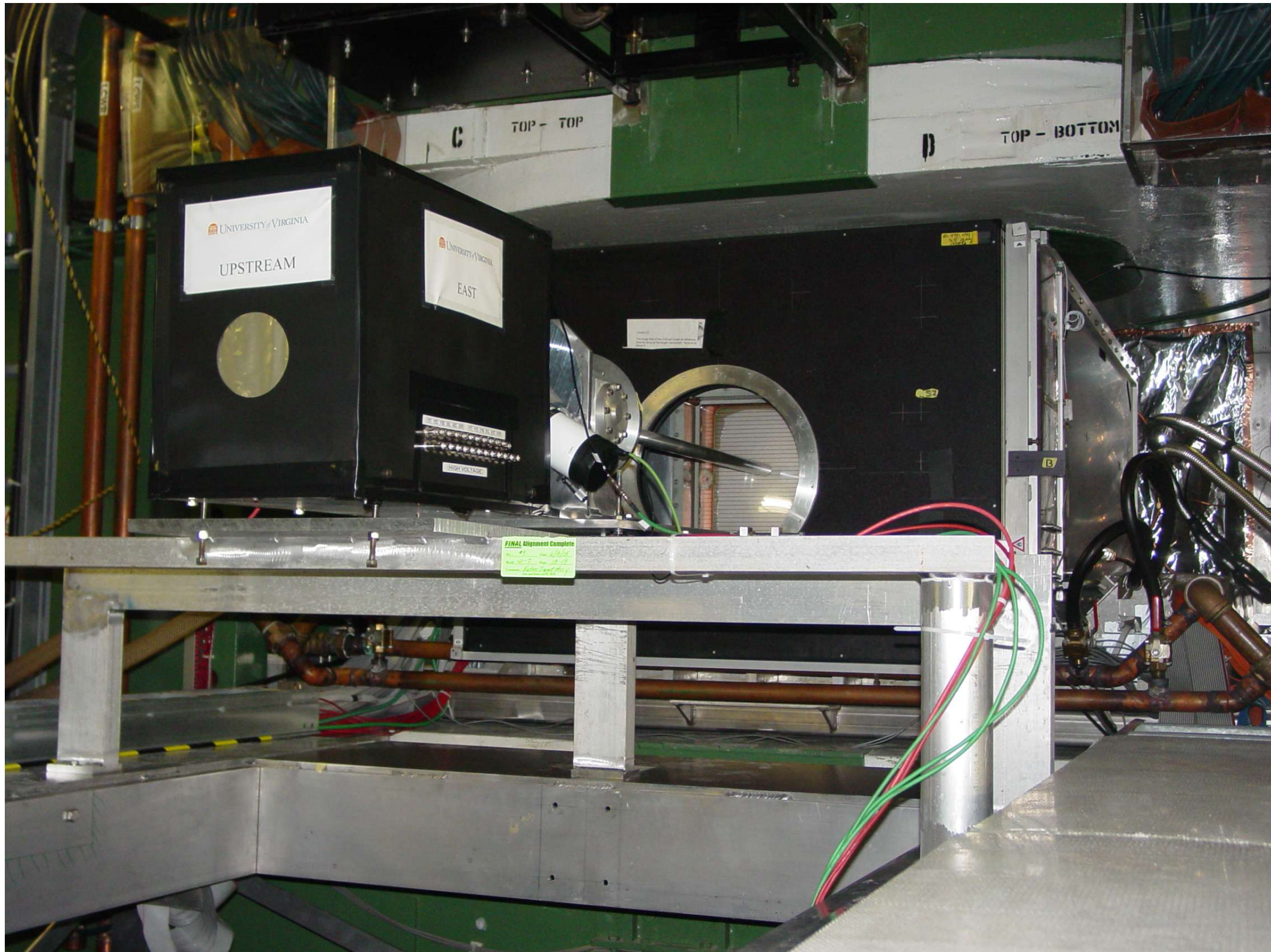


MIPP beam status

- Several SWICS have not been working since the Switchyard shutdown more than two weeks ago.
  - MC6WC1 and MC7WC1 have not been working
  - MC5WC has not been working part of the time
- This makes it very hard to tune the beam




ON
OFF
Parker Fluid Connectors
ON
OFF
Parker Fluid Connectors


C TOP - TOP
D TOP - BOTTOM
UNIVERSITY of VIRGINIA
UPSTREAM
UNIVERSITY of VIRGINIA
EAST
HIGH VOLTAGE
FINAL Alignment Complete

MIPP Detector status

- No really big issues over the last week, but a few minor issues
- E907ana1 crashed twice: thursday 3am and friday 3am.
  - E907ana1 hosts the MIPP db, needed for the DAQ
    - Also hosts /home partition, used for onmon on e907ana3
  - We lost ~3 hours of beam time to solve this issue
    - Cron jobs had grown over time to finally slow e907ana1 to a crawl.
- All other incidents did not result in significant loss of beam time.
  - Methylal refrigerator temperature sensor failed
    - Bypassed in regulation of gas mixture, needs to be fixed
  - Routine change of Isobutane resulted in accidental release of flammable gas in our gas shed
    - Fire department did react promptly
  - TPC anode HV is tripping more frequently (few times per day)
    - Always resets ok

MIPP summary

- MIPP is taking data on the NuMI target.
- Data quality is high
- MIPP needs more spills to satisfy physics goals