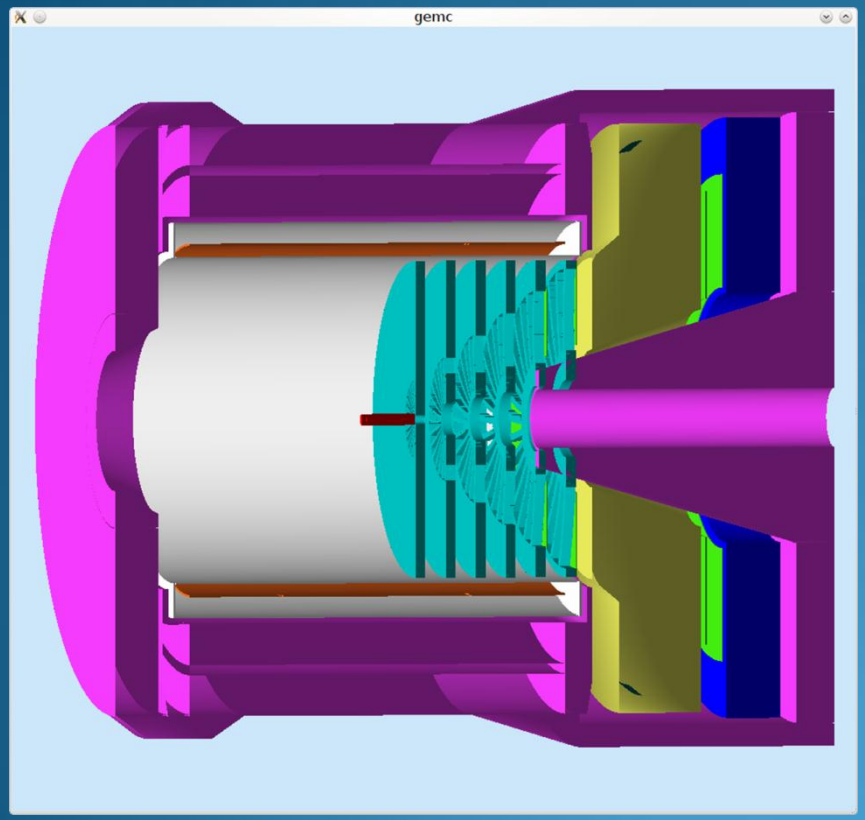
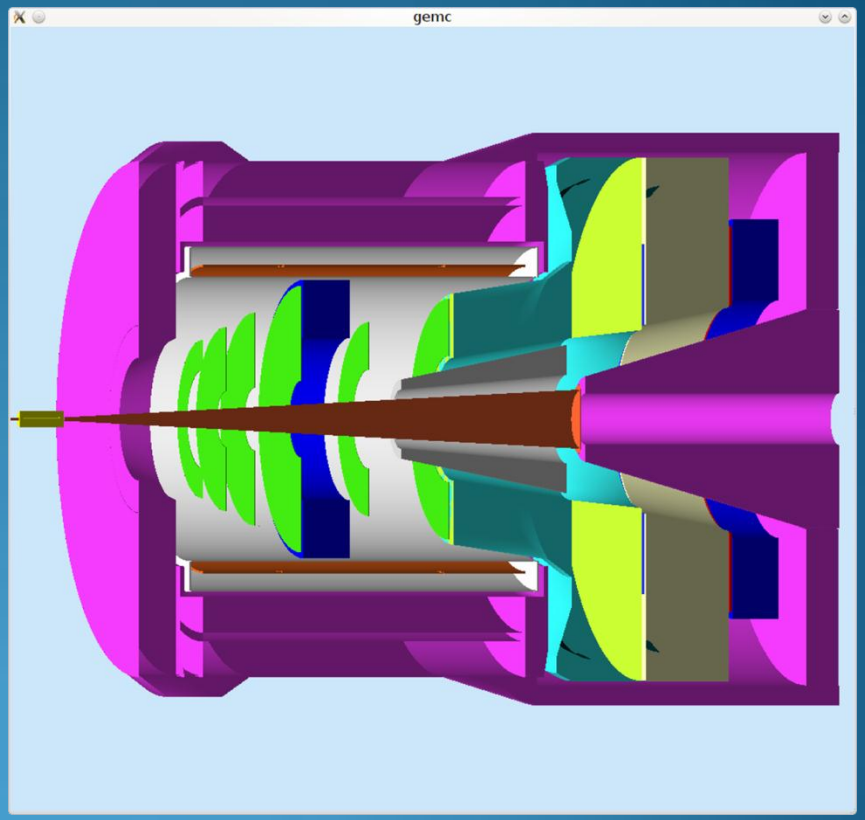
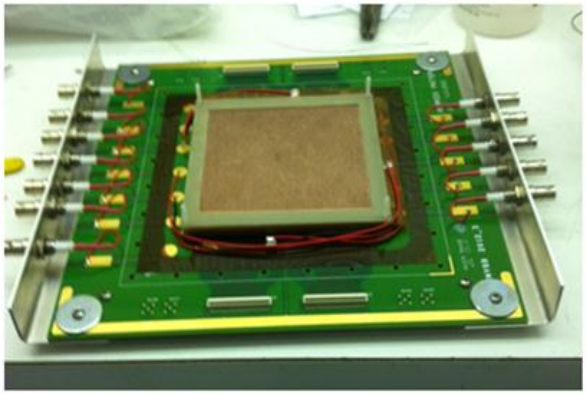
HBD Light RICH -- BRIEF



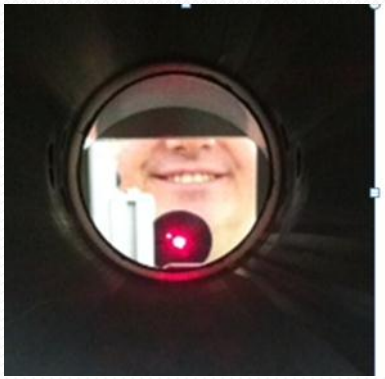


T.K. Hemmick

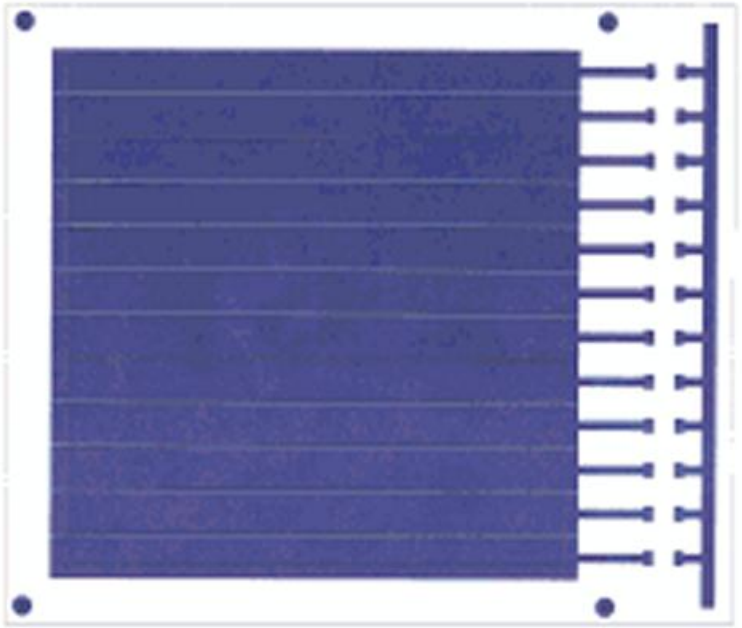
Forward CsI RICH Progress.

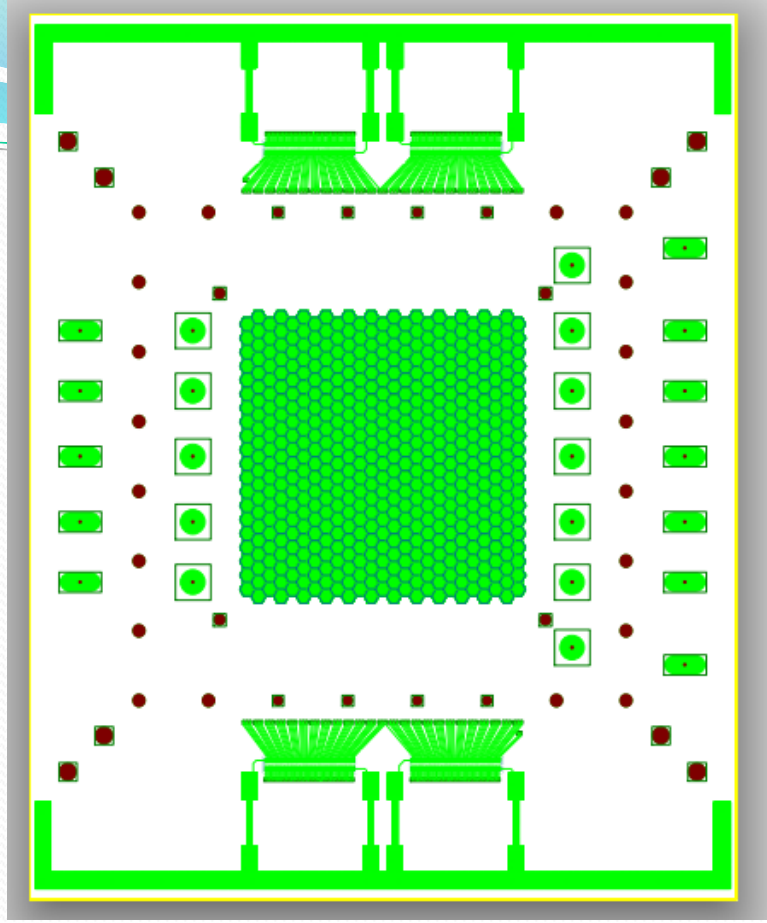


- Spring tests disappointing:
  - 2 million events w/ 15 tracks…none electrons.
- Test beam requested at SLAC March 2013



Changes for SLAC

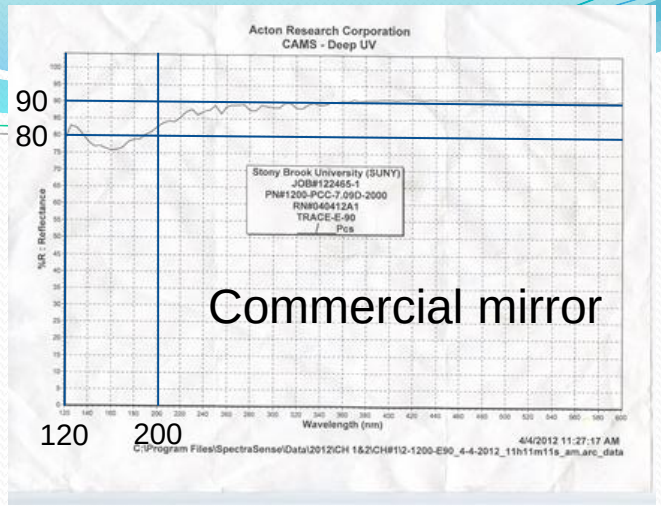




- New GEM foils…multiple strips like PHENIX.
- Second pad plane…hexagons to see rings.
- New trip detection system:
  - Capacitive coupling off resistor chain.
  - Integrated with PHENIX HBD HV relays.

Mirror Developments

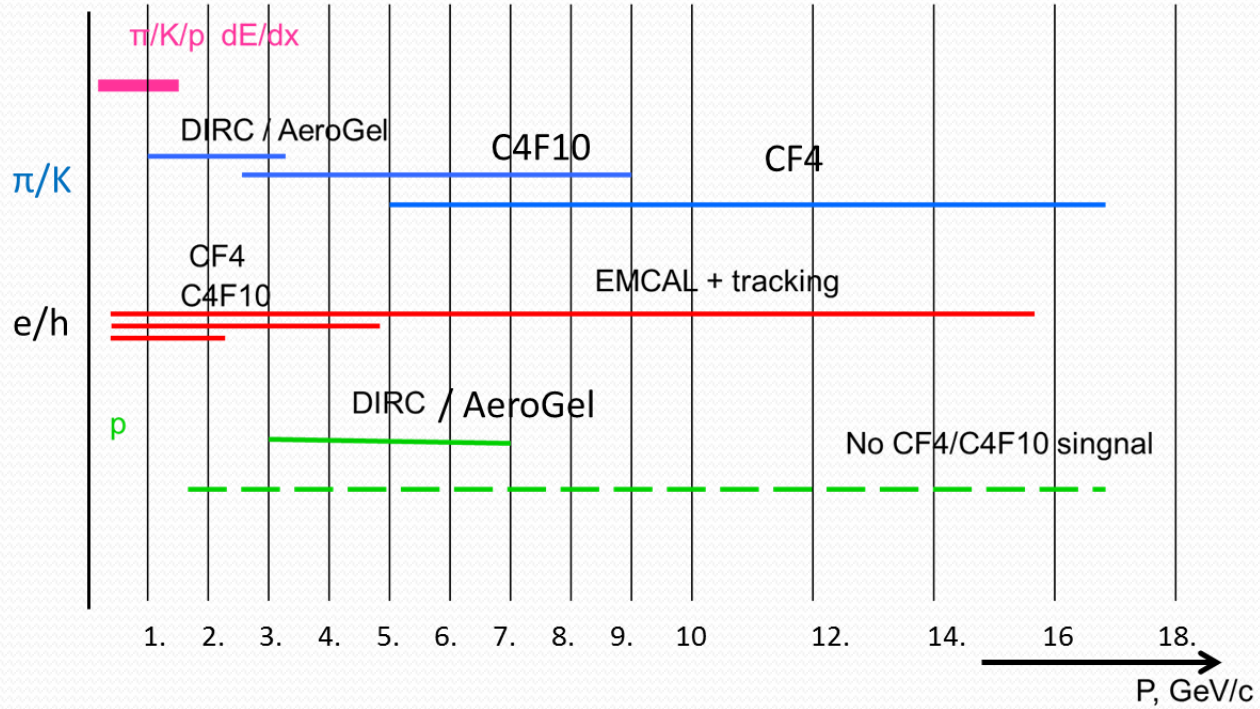
- Cherenkov photon yield primarily at small λ.
- Deep UV mirrors use 250 A° MgF_2 overcoat to act as dielectric mirror.
- Plans:
  - Year 1: Develop in-house manufacture of small mirrors.
  - Year 2: Scale up to use Big Mac
- First in-house mirror made!
- Reflectivity tests pending at BNL.



Backups

Forward RICH

Electron and Hadron PID



- RICH particle ID involves a limited dynamic range of momenta set by gas index of refraction.
- The highest momenta rely on the lowest n.
- Our R&D targets the highest momenta with a CsI photo-cathode RICH.
- Major Issue: Reflectivity of mirrors deep in the UV.