

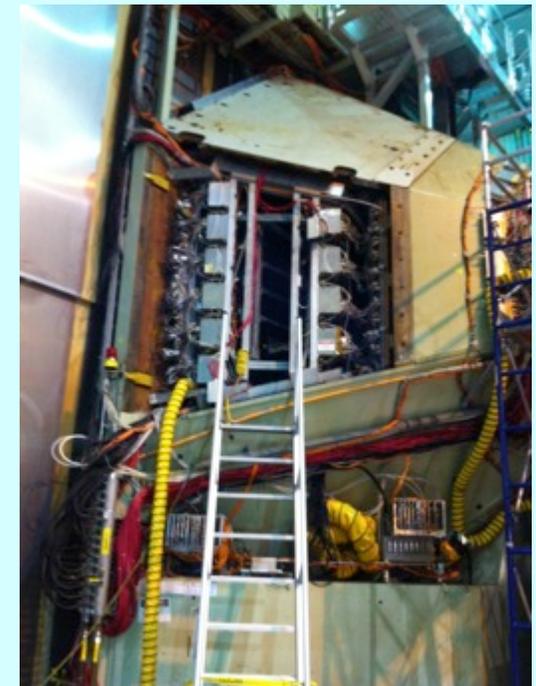
# PHENIX WEEKLY PLANNING



7/11/2013  
Don Lynch

## Since our Last Planning Meeting

- Move VTX East to PHYSICS Lab - **Done**
- Move VTX West To CHEMISTRY Lab - **Done**
- CPR training for techs who need it - **Rescheduled**
- 4<sup>th</sup> of July Holidays, Many on vacation, limited work schedule - **Done**
- Rollup door broken/fixed - **Done**
- Station 1 South scaffolding installed - **Done**
- MMS east vertical lampshade removed - **Done**
- MMS Scaffolding Assembly - **Started**
- Work Permits for DC East&West and Window Washer Winch- **Done, at CAD for Approval**
- Continue building VTX strip-pixel staves
- Continue sPHENIX support
  - HCal prototype
  - EMCal prototype design continuing
- MPC-Ex design for run 14
- Future IR evolution modeling



7/11/2013

## Next Week

- Continue MMS Scaffolding
- Start MMN Scaffolding
- Continue VTX Repairs/Upgrade
- Continue building VTX strip-pixel staves
- Continue sPHENIX support
  - HCal prototype
  - EMCal prototype design continuing
- MPC-Ex design for run 14
- Future IR evolution modeling

## Major Projects This Summer:

- VTX repairs/upgrades/general maintenance (Mike L.) **Work permit approved**
- DC East Window Replacement (Kenny J.) **Work permit at CAD for Approval**
- MPC-Ex Initial (partial) Installation (Jim L.) **Work Permit needed**
- mRPC Tests in mRPC Test Lab (formerly RPC Factory) (Frank T.) **Procedures Done**
- sPHENIX Prototypes assembly & tests (All) **(need space allocation and work permit(s))**
- MuTr troubleshooting and Repairs (Chris P.) **work permits approved**
- Window Washer Winch upgrade (Jim L.) **Work permit at CAD for Approval**

### Other Mechanical (TBD)

### Other Electrical Projects

- HVAC Controls Upgrade (Frank T.)
- Complete Window Washer Controls Upgrade (Frank T.)

### Other Electronics Projects

- Additional upgrading of ADAM system to MODBUS (Sal P.)
- Electronics research in support of sPHENIX and MPC-Ex(Sal P.)
- Lecroy HV communications upgrade (Sal P.)

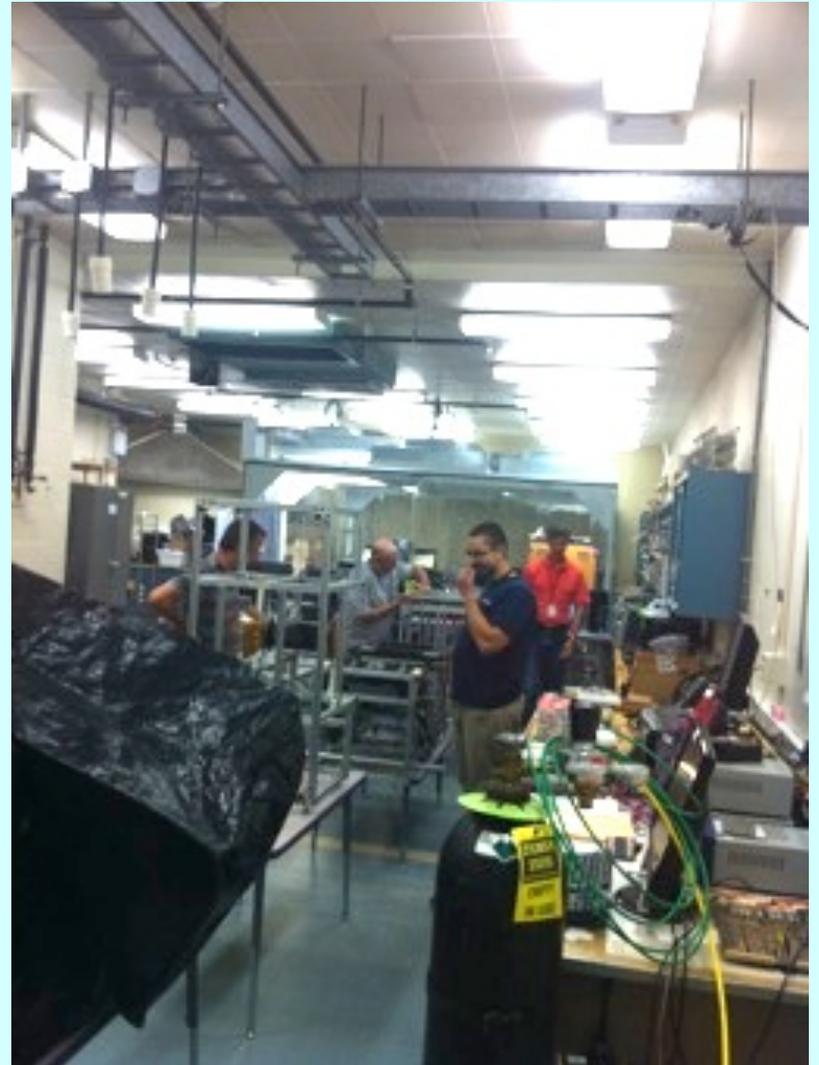
### Other Gas System Projects (TBD)

- RPC Gas Recirc. Upgrade (John T.)
- Drawing and Config. Control Improvements (SULI Student)

### Other Infrastructure Projects (TBD)

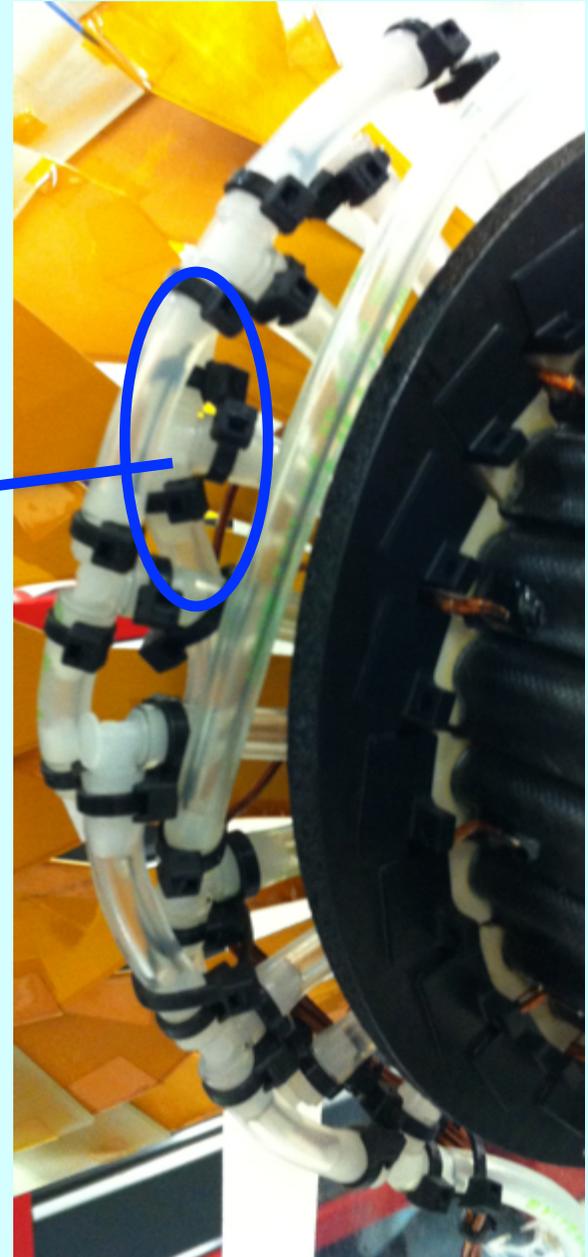
# VTX/FVTX repairs/upgrades

PHENIX PRODUCTION



7/11/2013

PHENIX 7/11/2013



## VTX & FVTX Summary of Tasks

VTX/FVTX Disassembly - After Start of shutdown tasks are completed (EC out to AH), coolant and N<sub>2</sub> lines, LV, signal and HV cables and fibers will be carefully removed and coolant drained. East and west detector halves will then be de-mounted and transported to Chemistry bldg for maintenance and overhaul. - Done

At Chemistry lab - VTX, bigwheels and FVTX will be disassembled and all 4 FVTX stations will be transported to the FVTX PHYSICS Lab. - Done

At PHYSICS FVTX lab -FVTX stations will be tested, faults will be isolated, repaired and re-tested.

Concurrently at Chemistry lab -VTX will be disassembled into individual barrels and bigwheels, new /reworked pixel staves will be installed, improved strip-pixel staves will be fabricated assembled and integrated with active components harvested from staves to be replaced, tested and reinstalled in their respective barrels. The VTX will then be re-assembled tested and re-surveyed.

FVTX transported to Chemistry building. FVTX Integrated into VTX. VTX/FVTX assembly surveyed

VTX&FVTX assembly transported to PHENIX and installed on rails.

Coolant and N<sub>2</sub> lines, LV, signal and HV cables and fibers will be carefully reattached.

Full detector re-surveyed in IR

## DC East Repairs/Upgrade



Similar to the work done on the DC West last year, the DC East will have its window replaced to repair the wear that years of wire repairs rendering the DC East window a patchwork of tape and have elevated leak rates to the point where replacement of the mylar window is needed.

In addition, troubleshooting and repairs on the DC West are planned, and efforts to isolate and fix a small leak on the East will also be undertaken.

## DC East Repairs Summary of Tasks

- East Carriage move to AH - Done
- Work Permit needed - in progress
- Design & Construct tent (similar to tent constructed for DC West last year) to prevent foreign material from entering DC East cavity while window is removed.
- CAD to provide 2 vertical manlifts to allow DC experts to remove and replace window
- Get supplies and materials from Stony Brook for window replacement
- Troubleshooting and repairs on DC West
- Supply Gas, DAQ and Electric to EC East
- Isolate and repair leak on DC East
- Remove and replace window
- Isolate and repair leak under electronics card
- Leak test
- Operational tests
- Remove tent and manlift

# MPC-Ex Initial (Partial) Installation

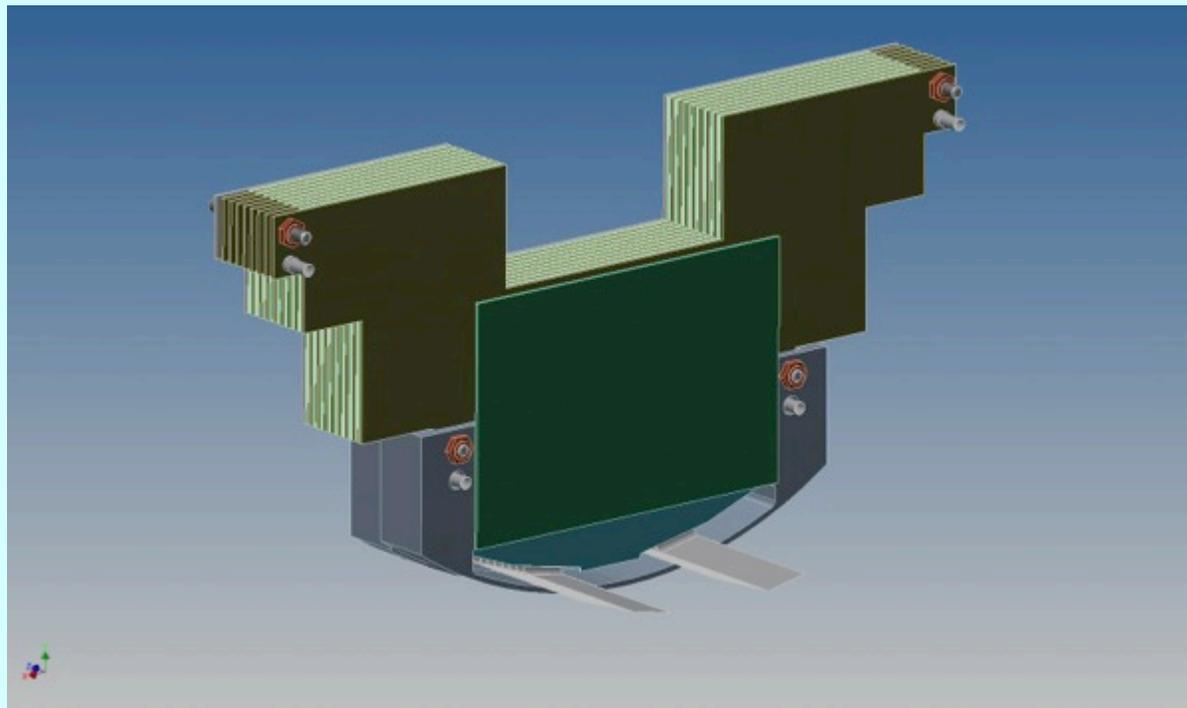
PHENIX  
SUPPORT  
TEAM



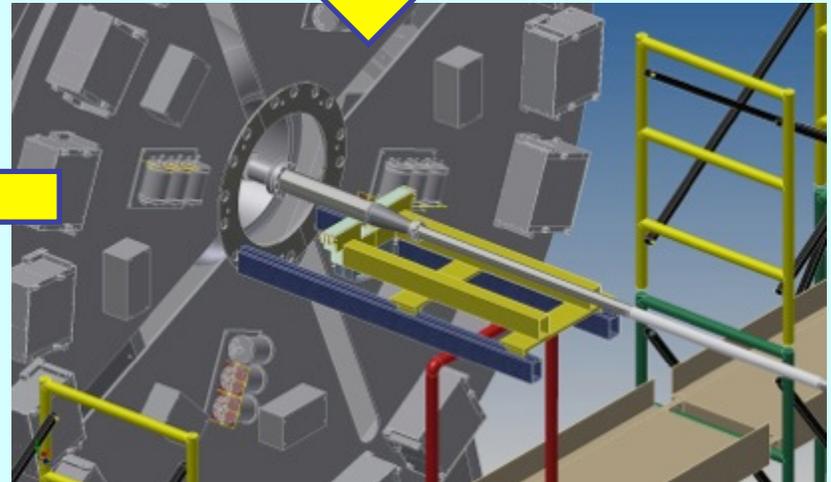
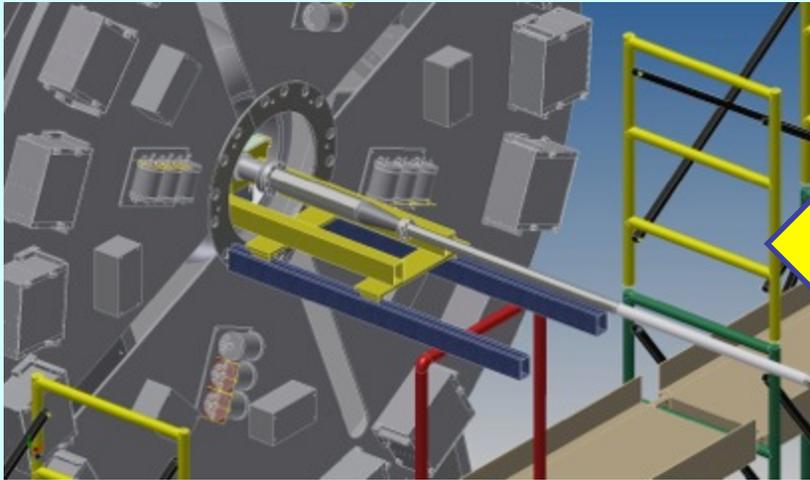
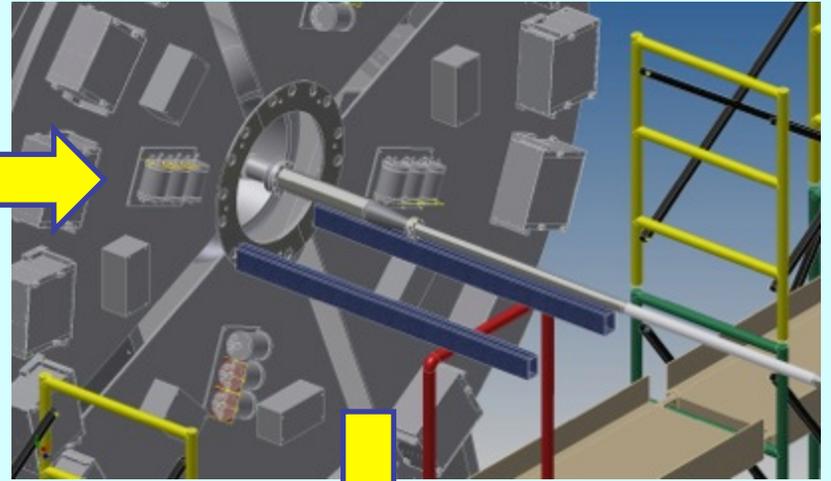
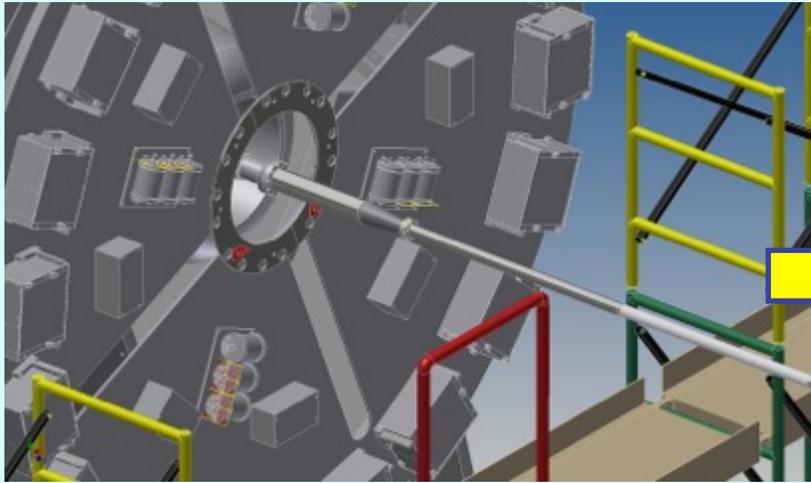
Existing vacuum bellows anti-squirm In MPC S Cavity



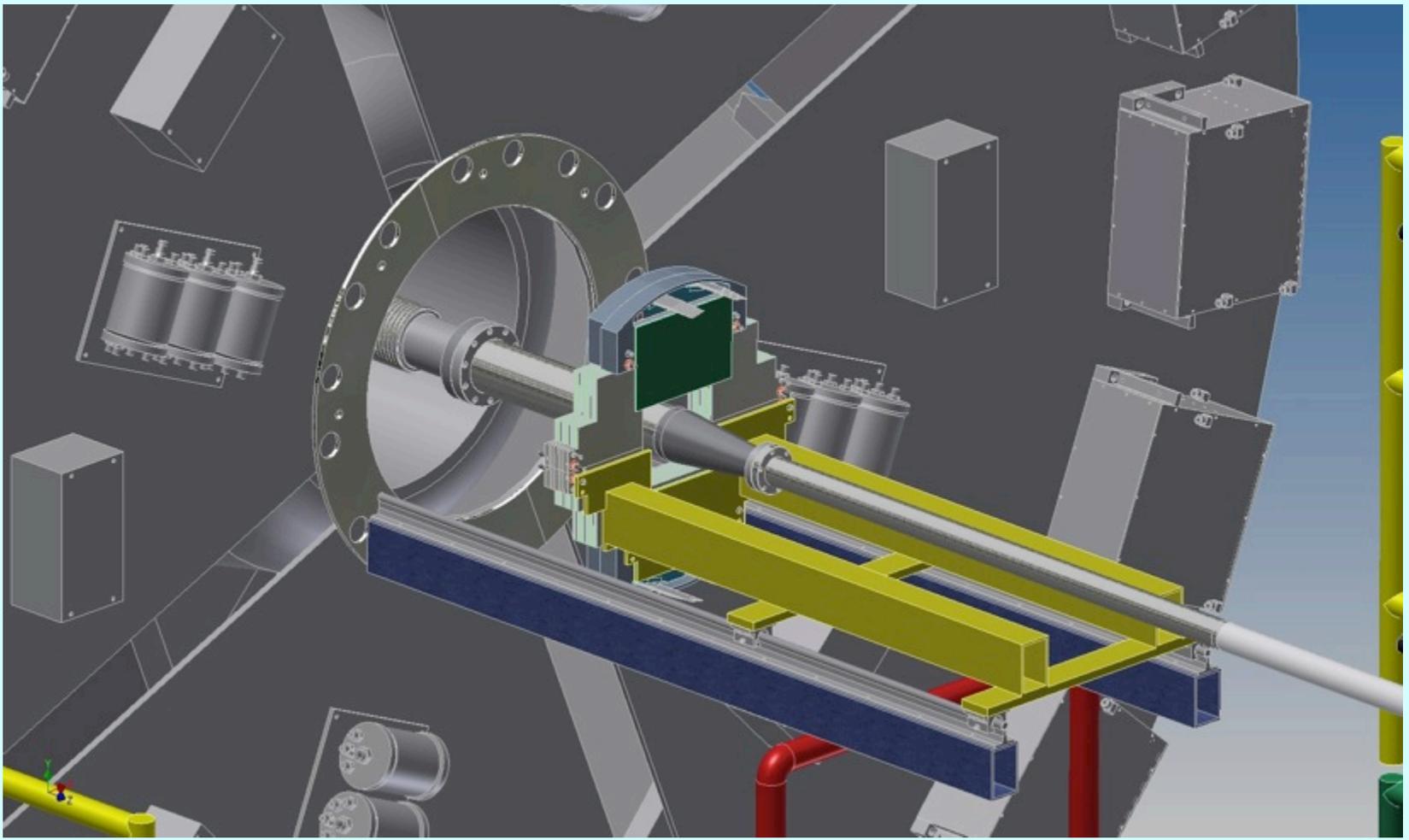
Design vacuum bellows anti-squirm in MPC S Cavity to accommodate MPC-Ex



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## MPC-Ex Initial/Partial Installation Summary of Tasks

PHENIX  
 DC  
 SUPPORT  
 NORM

### Determine extent of installation for 2013 - Done:

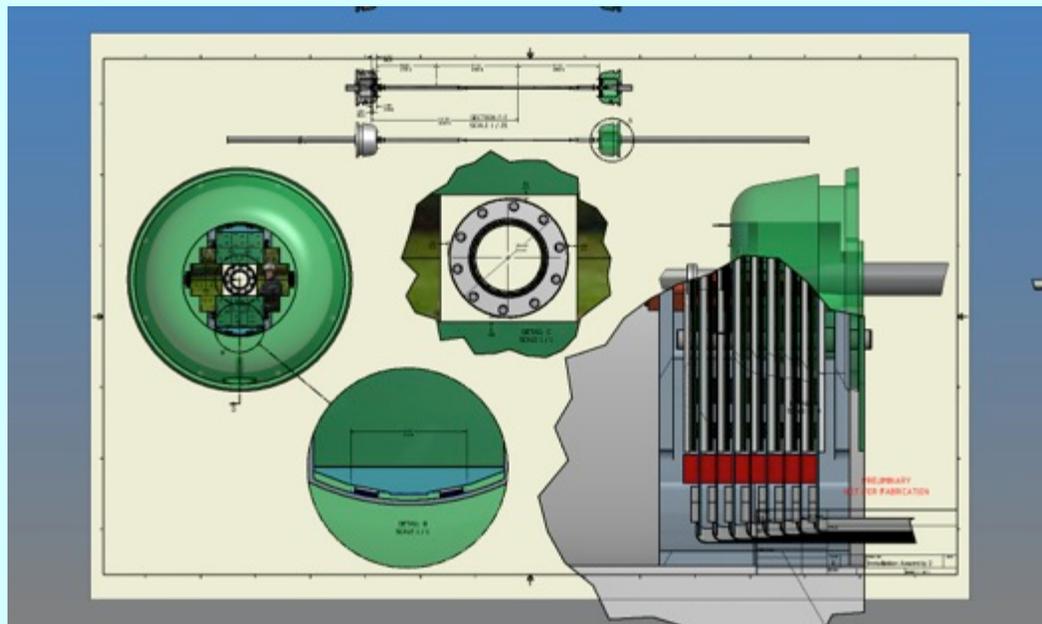
For Run-14 the goal will be to install four mechanically complete layers of the MPC-EX, both top and bottom halves (8 tungsten plates) in the south muon magnet piston. Four layers will have carrier boards, and those carrier boards will be partially populated so that we have partial coverage in azimuth with full coverage in depth. *Installation Schedule 11/1-11/15*

Design assembly, support and installation fixtures

Assemble and bench test

Install

Performance tests

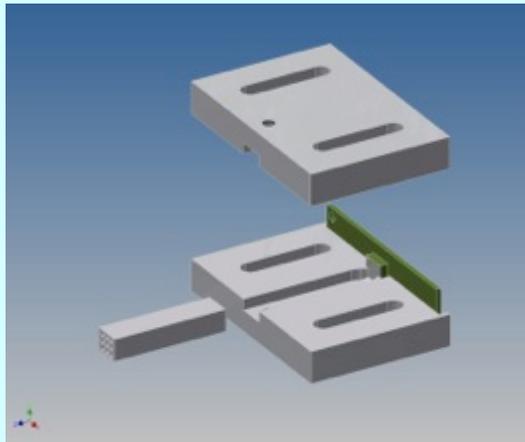
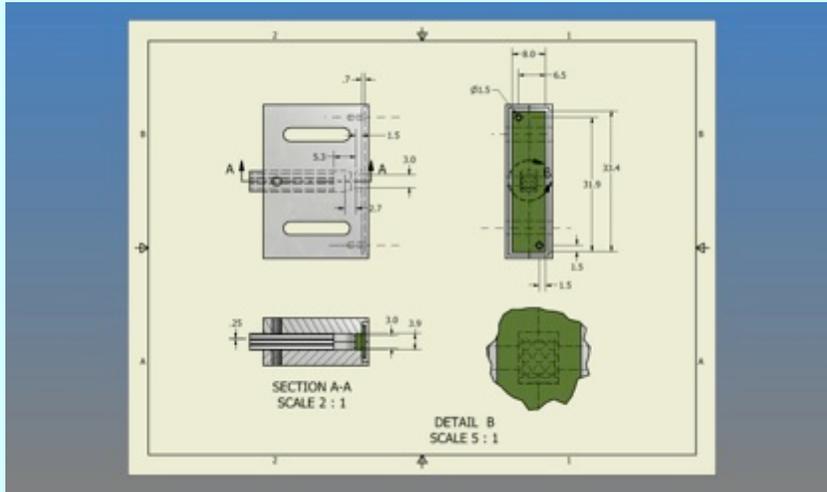


mRPC Test Lab Project

mRPC Test Lab Support  
as required

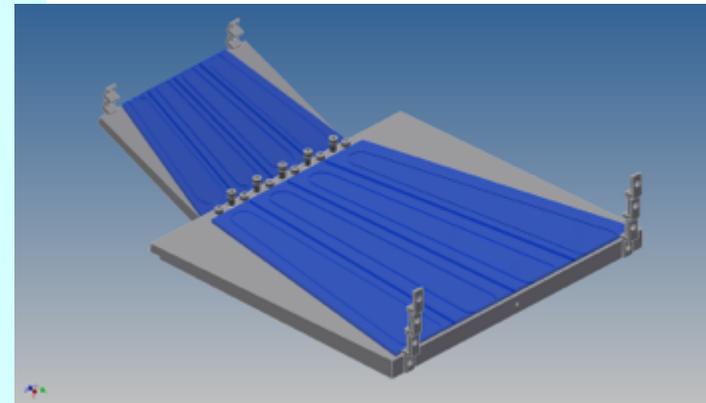
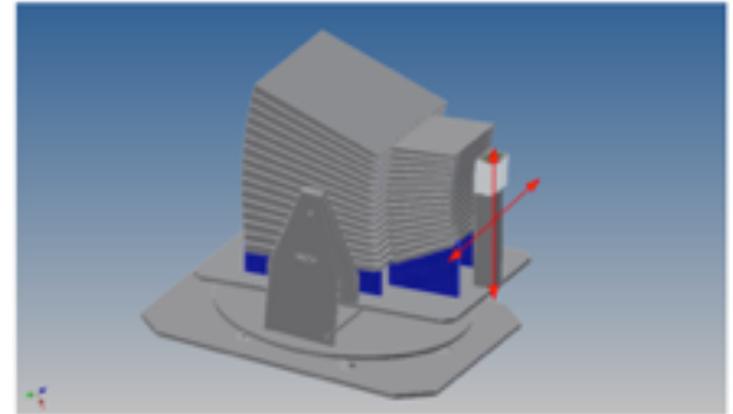
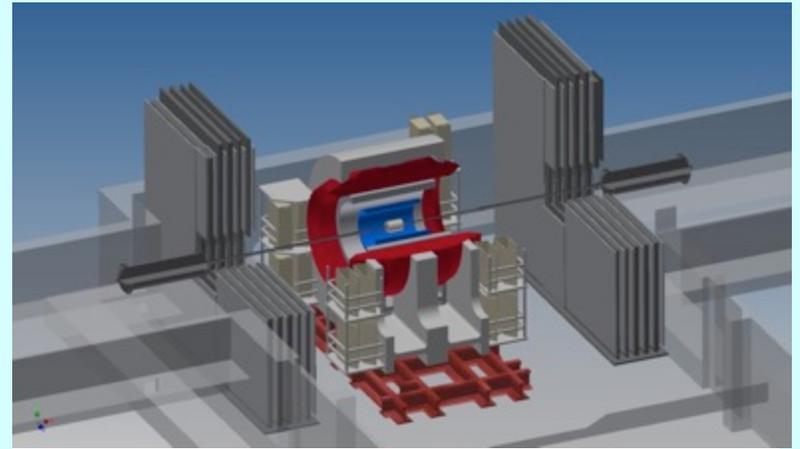


PHENIX SUPPORT TEAM

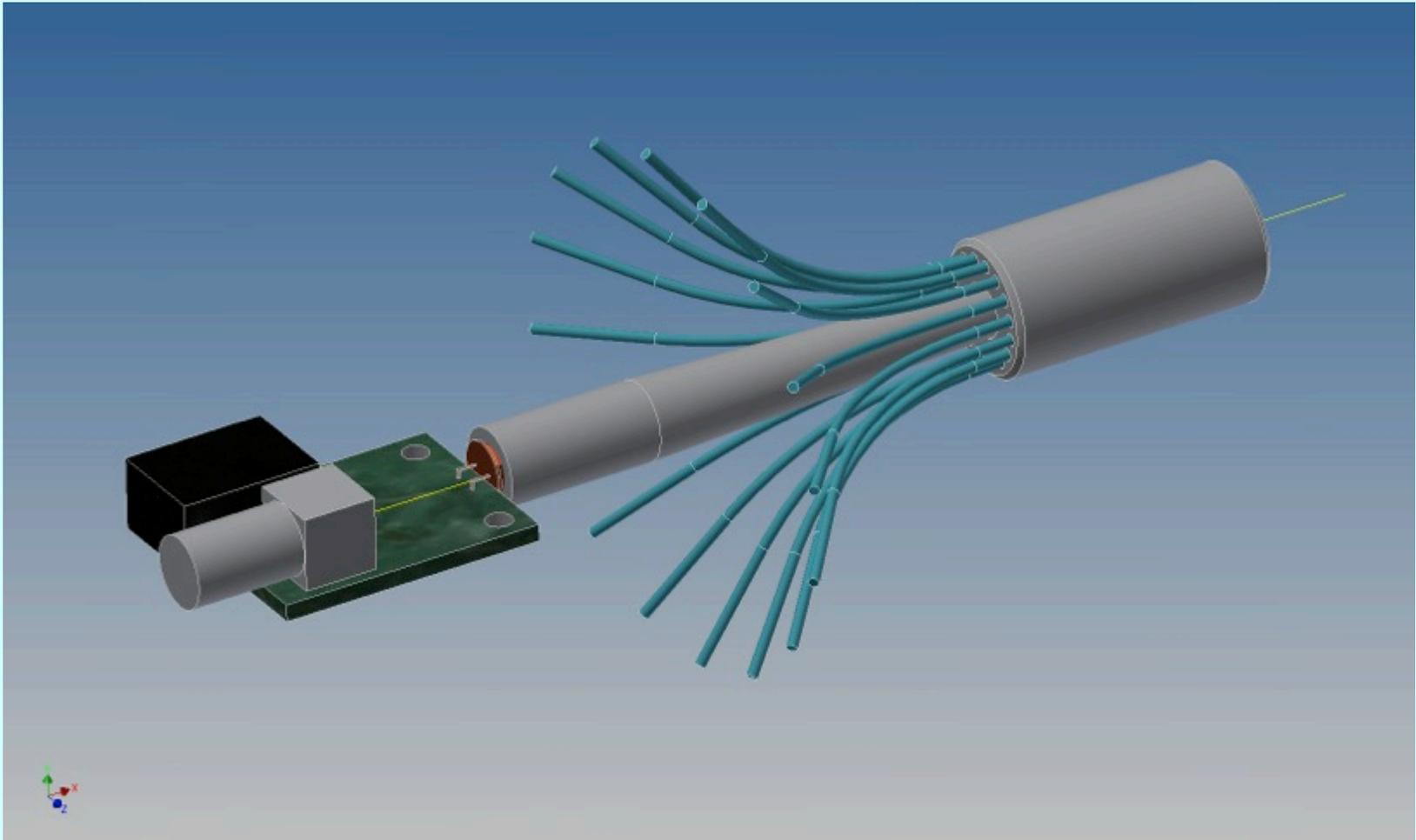


Hcal prototype component procurement is underway:

Steel and scintillator procurements in progress



PHENIX 7 3D CAD MODELING SOFTWARE



## sPHENIX Prototype Assembly and Test Tasks

Design Hcal and EMCAL Prototypes and support components and shipping crates - **in progress**

Procure materials and detail parts - **in progress**

Receive and inspect parts

Assemble prototypes

Test assemblies for mechanical fit and function

Package and ship prototypes to FERMI Lab for performance tests

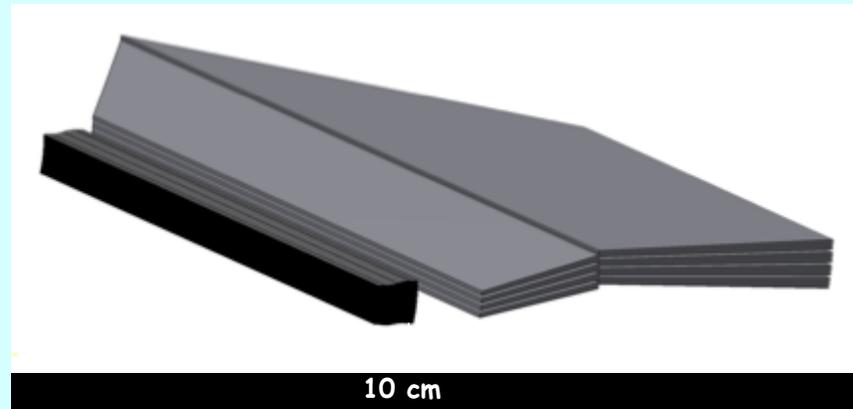
Test and Evaluate at Fermi Lab

# EMCal Prototype

Prototype accordion plates with fibers produced as part of SBIR. EMCal for test beam will be flat tapered plates



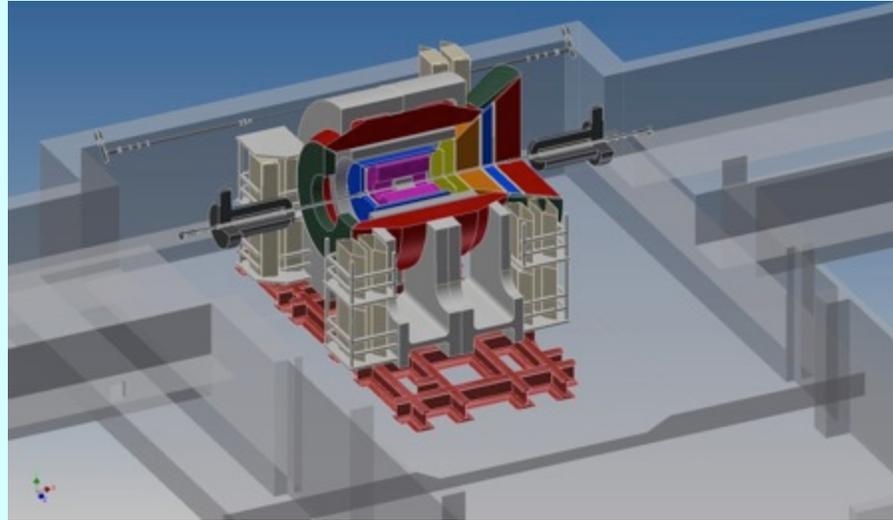
Prototype "Egg Carton" light collection



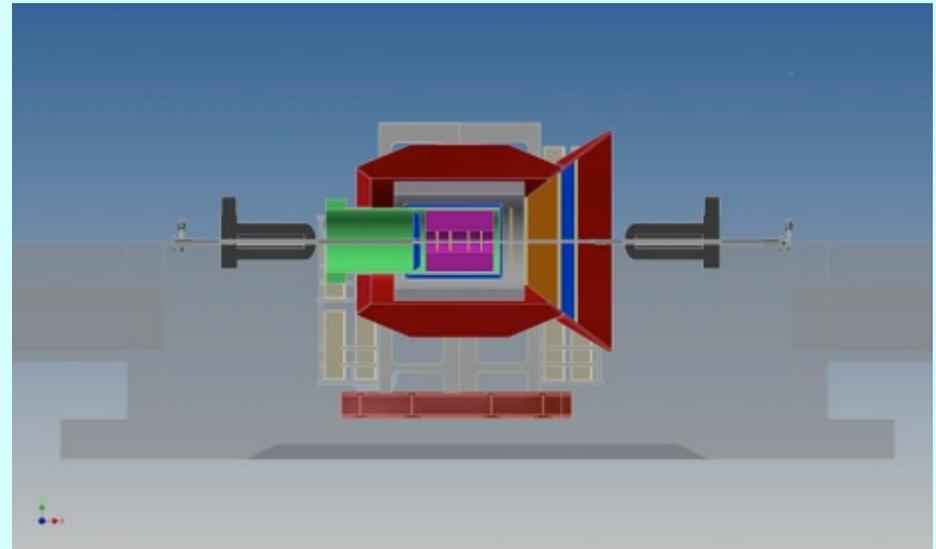
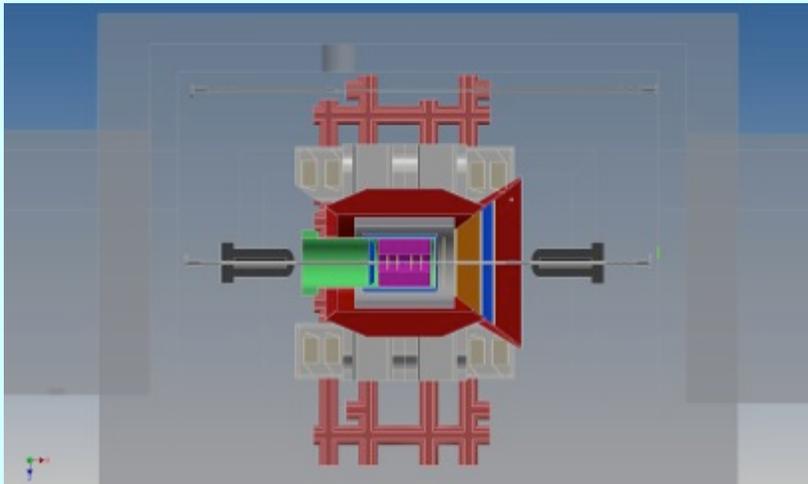
Proto-type EMCal in front of proto-type HCal

(Photos from Eric slides, from Craig and Sean slides)

ePHENIX



Plan View

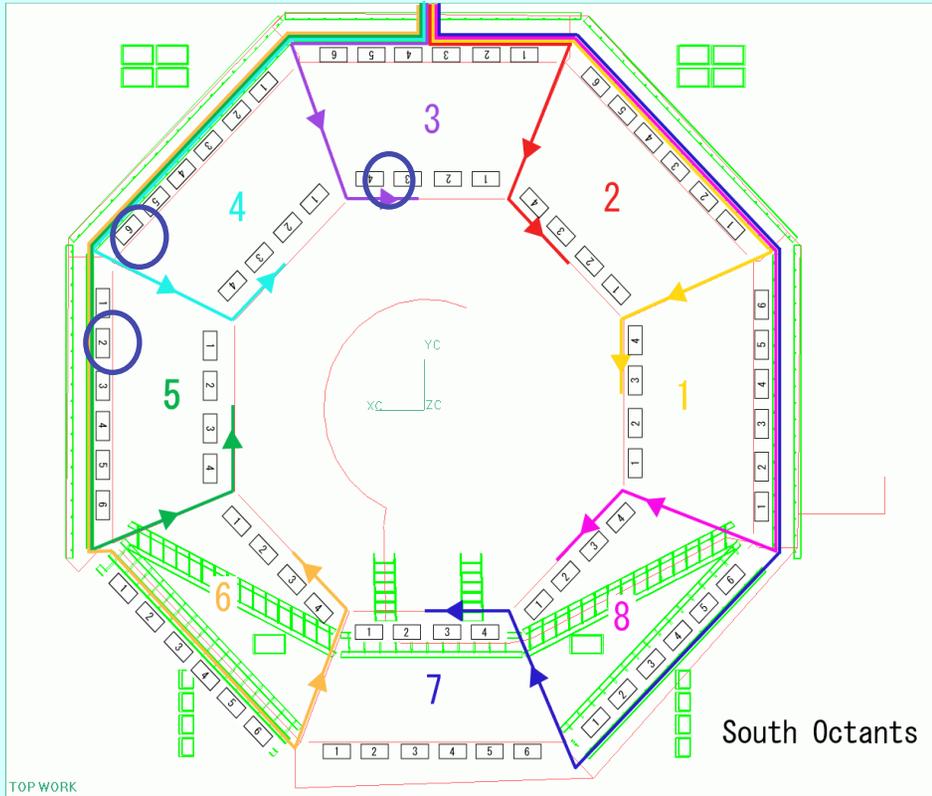


Elevation View

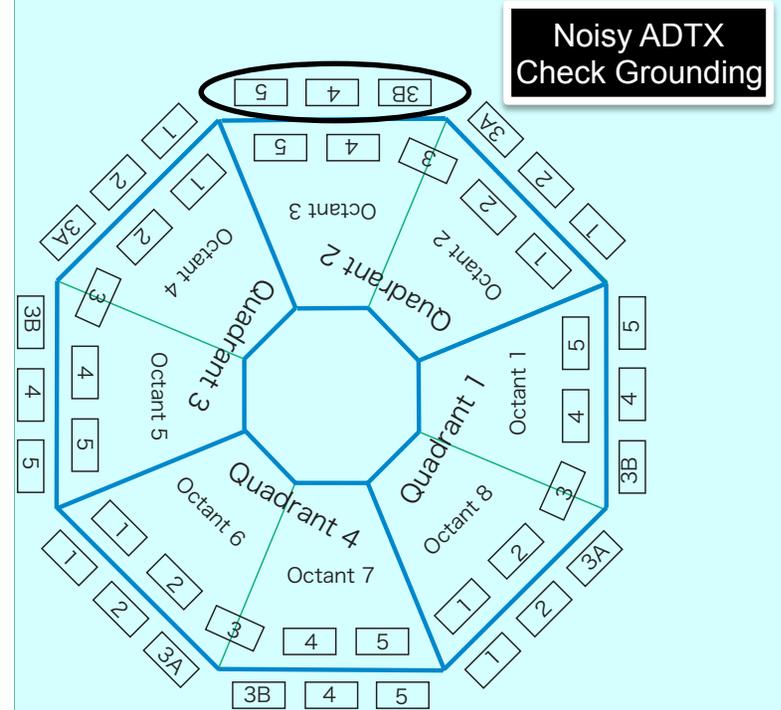
# MuTr South Arm Areas to be accessed

PHENIX SOUTH ARM

Station-2,3

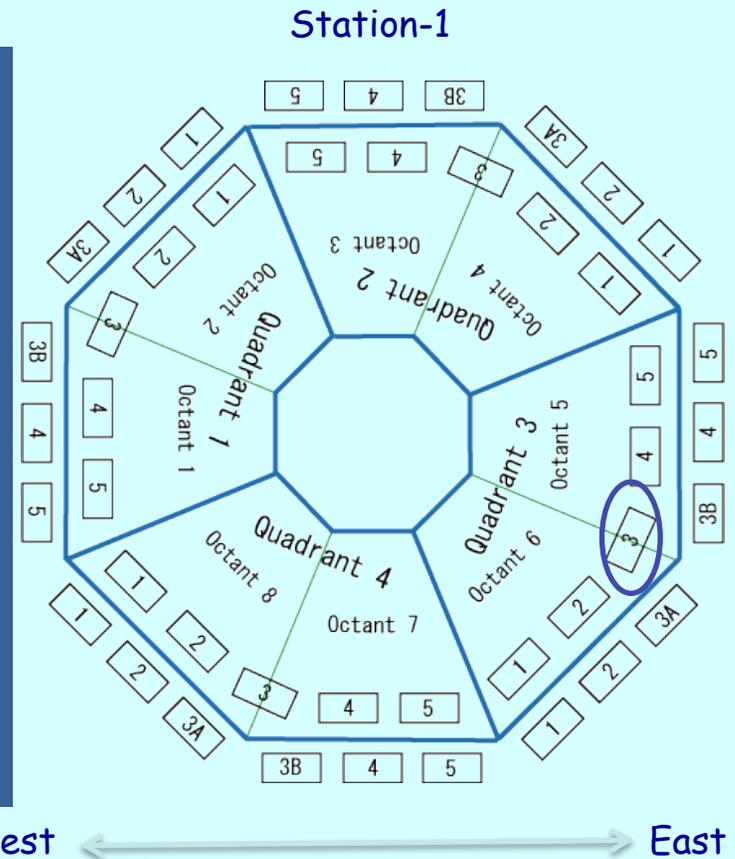
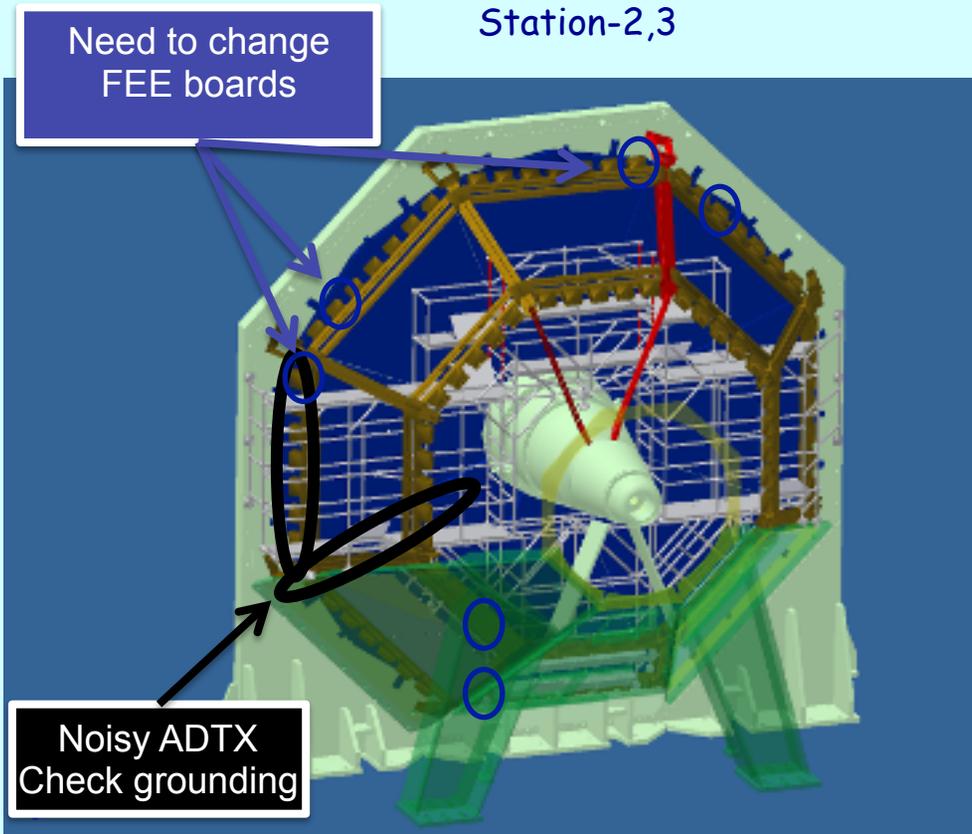


South Station-1 Chassis

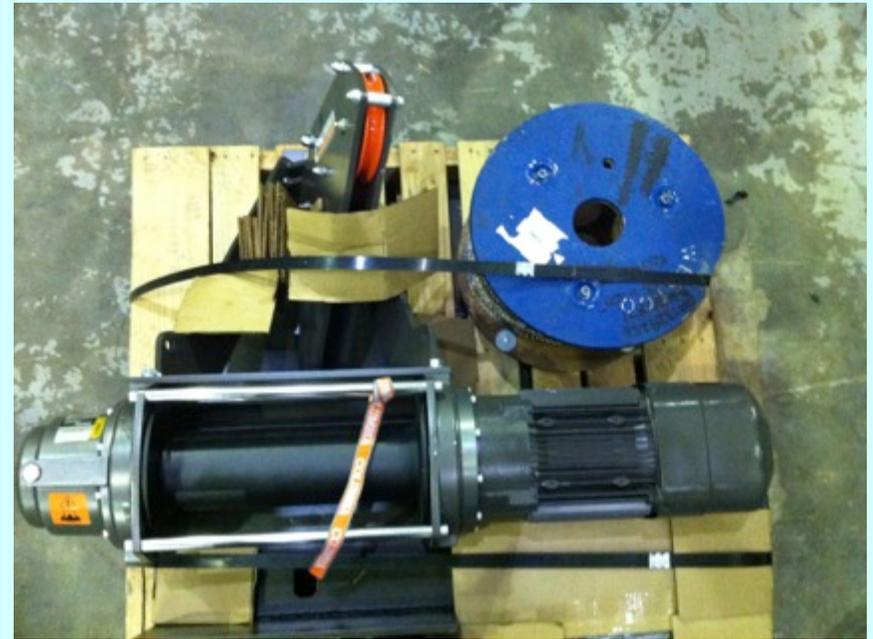
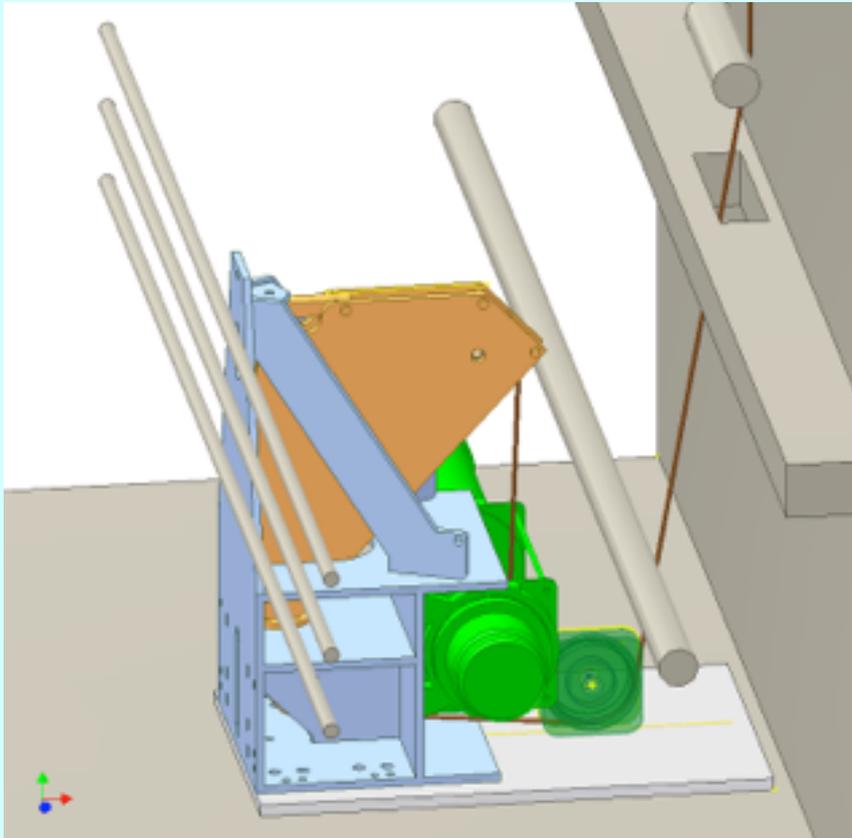


# MuTr North Arm Areas to be accessed

PHENIX NORTH ARM



### Window Washer Winch Upgrade



Winch Received

## Window Washer Winch Upgrade Summary of Tasks

Specify and Order Winch & Sheave - Done

Receive and Inspect winch and components - Received Yesterday

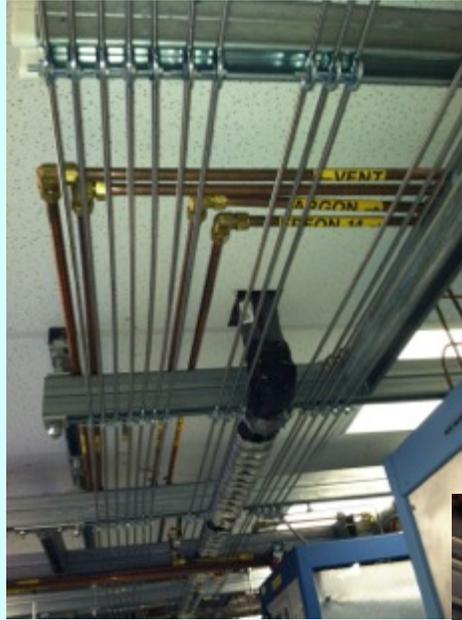
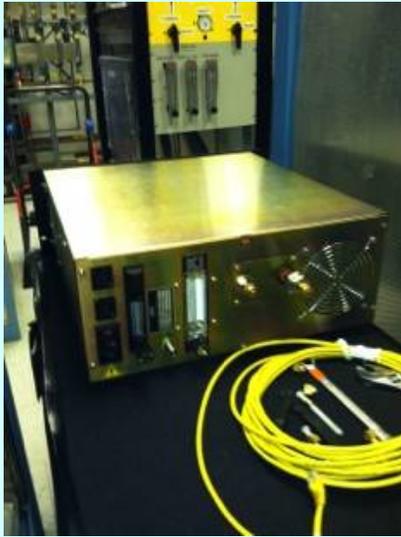
Design and Fabricate Winch & Sheave Base

Install and test Winch, integrate with window washer hardware, controls and power

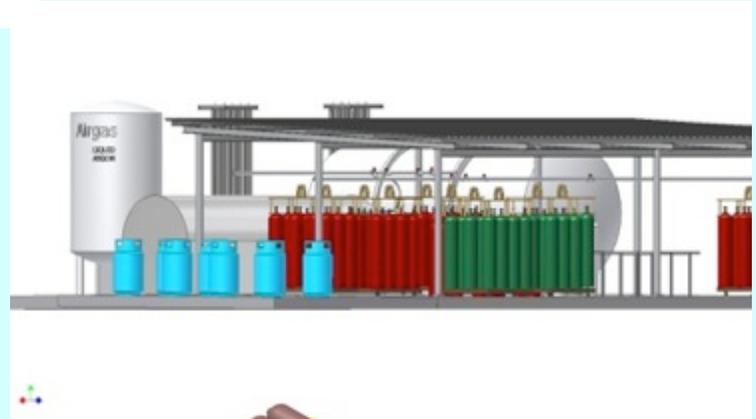
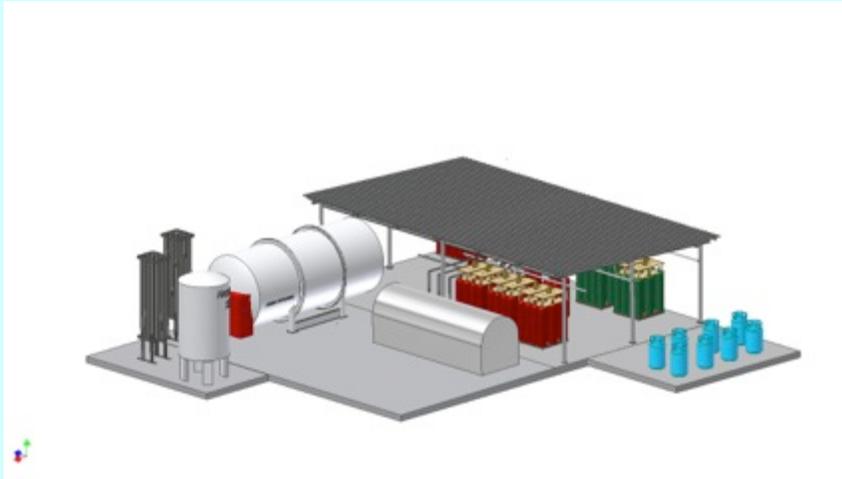
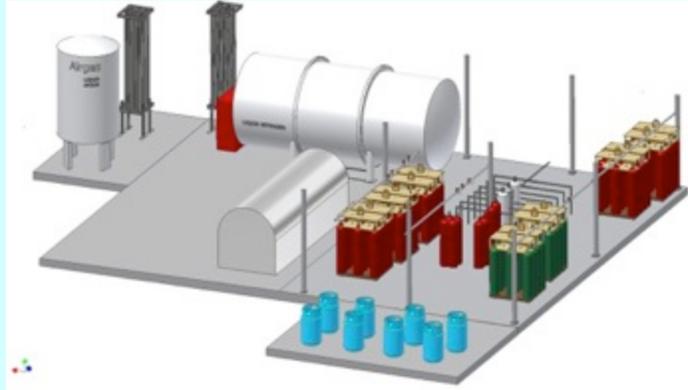
Final Inspection and approval of window washer upgrade

(Note: remote safety pin insertion and retraction was installed and has been in operation since the start of run 13.)

Work Permit at CAD for Approval



### New Gas Analyzer Project (RPC recirculation and more)



Gas System CM and Model Updates



RPC Factory Decommissioning



# RPC Group

Rusty Towell  
July 11, 2013

Storage

Tent Clean-Up

Return Equipment

# Storage of spare RPCs

- 10 spares, moved to dark current test stand.
- Attached to gas distribution panel.
- Dave Northacker plumbed wet nitrogen (30-50% RH) to this panel.
- Help starting flow?
- Help monitoring gas?



# Other Long Term RPC Storage

- CAEN spares
- HV cables
- FEE boards
- Connectors
- Where will it be located at 1008?
- Who/when can it be moved?



# Shipping Equipment

- Who must approve equipment to be shipped from the RPC Factory Tent area?

- ZDC Remove, Test, Recalibrate



- Event Builder Maintenance: removing and cleaning EB modules
- RPC Factory Decommissioning

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Prep for 2013 shutdown	Done
Design, Fabricate MPC-Ex	
Define tasks and goals	
Analysis and design of fixtures, tools and procedures	
Fabricate/procure tools and fixtures	
Tests, mockups, prototypes	
Receive, fabricate, modify, finish installables	
Review and approval of parts, tools, fixtures and procedures	
Assembly and QA tests	
VTX Strippixel redesign	Done
VTX Strippixel 1 <sup>st</sup> article stave assembly	Done
VTX Strippixel 1 <sup>st</sup> article qualification/performance tests	Done
VTX strippixel stave production	5/20-9/20/2013
VTX Strippixel sensor reclamation	4/1-8/20/2013
VTX Strippixel ladder assembly & Test	7/15-9/27/2013
Pixel Ladder repairs	4/1-9/20/2013
Run 12 Ends	Done
Shutdown Standard Tasks	Done
• <del>Open wall, disassemble wall, Remove MuID Collars</del>	
• Move EC to AH, etc.	
VTX/FVTX Post run tests	Done
Disassemble VTX/FVTX services	Done
July 4 <sup>th</sup> Holiday	Done
Remove VTX/FVTX and transport to Chemistry Lab	7/8/2013
Remove Lampshade MMS, East Vertical	Done
Assemble, Test and Install MPC-Ex (Partial, location TBD)	7/22-10/1/2013

PHENIX  
 PRODUCTION

MuTR Troubleshooting, maintenance and repairs	7/22-9/27/2013
Summer Sunday (8/11) Prep and teardown	7/29-8/6/2013
Summer Sunday (RHIC)	8/4/2013
DC East Window Upgrade and Related Repairs	8/19-9/27/2013
sPHENIX HCal Prototype Assembly/test	8/19-10/15/2013
Labor Day Holiday	9/2/2013
Re-assemble VTX/FVTX halves	8/19-10/14/2013
Test, survey (at Chemistry and IR) and re-install VTX/FVTX	10/14-10/21/2013
Install & Survey VTX/FVTX in 1008 IR	10/21-11/18/2013
VTX Commissioning	11/18-12/9/2013
Other detector maintenance as required	As required
Infrastructure maintenance as required	As required
TBD prototype tasks	As required
Pre-run commissioning and prep for run 14	11/1-12/31/2012
Veterans Day, Lab Holiday	11/11/2013
Prep for EC roll in	11/1-11/9/2013
Roll in EC	11/10-11/12/2013
Prep IR for run	11/1-11/30/2013
Thanksgiving Holidays	11/28-29/2013
Pink/Blue/White sheets	12/14-12/31/2013
Christmas Holiday	12/24-25/2013
New Year's Day Holiday	1/1/2014
Start run 14	1/2/2014

CPR Course Cancelled for most of us: need to reschedule

From Ray Karol:

**1. Lessons Learned: From DOE: PNNL Staff Member Slips on Paperwork, Injures Back**

Sliding information under an office door is perhaps common practice, but in this case, the staff member entering their office the next day did not see the paper on the floor and slipped, tweaking their back.

**Discussion of Activities:**

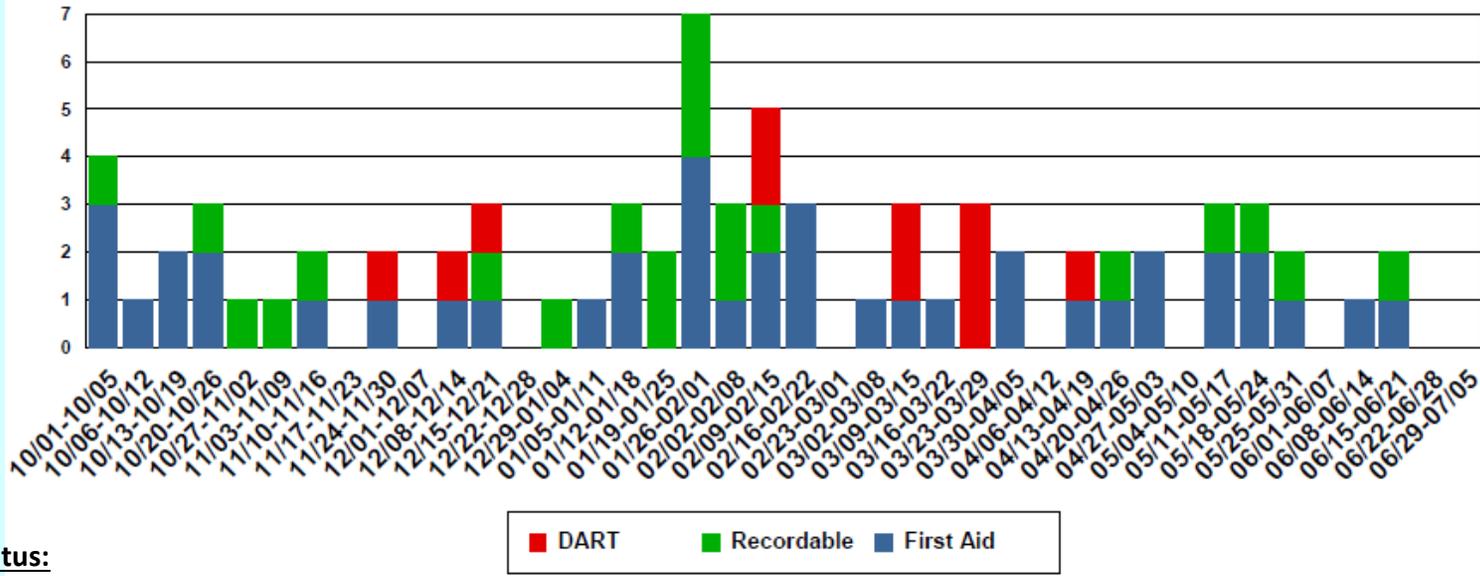
A PNNL staff member, who was carrying a few items into work one morning, opened the door to enter their office and slipped on some paperwork that another staff member had slid under the door on the tile floor. Reacting quickly to maintain balance, the staff member sustained a back injury.

**Recommended Actions:**

While sliding information under a door may be a common practice, safer options (for tile floors) would be to use the building mail, clip papers to the door, or wait until the next day for delivery.



### Injuries Per Week (FY) As of 7/3/2013



**Injury Status:**

FY13 YTD: DART – 11, TRC – 32, First Aid – 41

FY12: DART – 17, TRC – 35, First Aid – 70

FY11: DART – 30, TRC – 44, First Aid – 45

FY13 Injury Listing: <https://intranet.bnl.gov/esh/shsd/seg/Occlnj/BNLInjuries.aspx>

**Recent Injuries**

6/19/13	Recordable	While drilling metal, an employee lacerated a thumb. After transport to a local emergency room, stitches were given, making this recordable.
6/19/13	First Aid	An employee fell from a chair after giving blood. At the OMC, first aid was given.
5/29/13	First Aid	A subcontractor employee was working with a co-worker when a clamp broke and his hand was caught between two pipes. First aid was provided.

Recent Events		
7/3/13	Non-Reportable	While attempting to refuel a BNL vehicle at the Compressed Natural Gas Filling Station, an employee was having a problem with the fuel card and was going to try the “other side” of the pump island. He was moving the vehicle when he felt the hose and restraining wire pop and disconnect as a result of the hose remaining connected to the vehicle. The auto disconnect feature worked as designed when the hose was pulled away from the pump - there was no fuel release. The employee immediately notified F&O/Staff Services and the pump was taken out of service. ( <a href="#">Event Link</a> )
7/2/13	Non-Reportable	EPD personnel noticed a pipe leading from a groundwater treatment system extraction well (EW-2) to the treatment building was leaking (estimated leak rate was 3-5 gpm). The well was shutdown and the leak immediately stopped. Based on the vegetation growth in the area, it is assumed that water has probably been leaking for quite some time. All Strontium-90 (Sr-90) concentrations have been well below the 8 pCi/L Drinking Water Standard (DWS) during the last 12 months, with the sample collected in June 2013 having a Sr-90 concentration of 0.8 pCi/L. Because the levels are below the DWS it is not considered a “discharge without treatment” situation, or radiological contamination. EPD will repair the pipe as a maintenance issue. ( <a href="#">Event Link</a> )
7/1/13	Non-Reportable	Fire Rescue responded to an alarm at B913E and found that smoke was caused by failure of a fluorescent light ballast. The building was unoccupied and there was no other damage. ( <a href="#">Event Link</a> )
6/28/13	SC-BNL	On 6/28/2013, a contractor was assigned to repair an overhead door in B1008. The contractor placed his personal lock on the lock box as part of the complex LOTO; although he had current LOTO-Authorized-Non-Electrical training, he did not have LOTO-Authorized training, which was originally specified as part of the work plan for this LOTO procedure. UPDATE: After further review it was determined that LOTO-Authorized-Non-Electrical training was appropriate for the LOTO that was completed. It was noted that the work planning overprescribed the training that was actually required and that verification of completed training did not occur until after the LOTO was in place. ( <a href="#">Event Link</a> )
6/26/13	Non-Reportable	Outside contractors were working without a Work Permit performing site wide Fire/Alarm System UPS battery chassis replacements, and without safety glasses and safety shoes. This work under F&O requires a Work Permit. ( <a href="#">Event Link</a> )
6/26/13	SC-BNL	Fire/Rescue responded to a small butt can fire outside of Berkner Hall. ( <a href="#">Event Link</a> )
6/15/13	SC-BNL	The NSLS X-ray ring began experiencing significantly reduced electron beam lifetime and was shut down. After extensive investigation it was determined that there was a water to vacuum leak that was traced to the water cooled crotch on the X-25 insertion device vacuum chamber. The ring cannot be operated without this cooling, even with the X-25 insertion device disabled. As of June 28 <sup>th</sup> , the X-ray ring remains shutdown and repairs are ongoing. ( <a href="#">Event Link</a> )

# Where To Find PHENIX Engineering Info

## July 11<sup>th</sup>: On This Day in History

- 1533 England's King Henry VIII was excommunicated.
- 1767 John Quincy Adams, the sixth president of the United States, was born in Braintree, Mass.
- 1798 The U.S. Marine Corps was created by an act of Congress.
- 1804 Vice President Aaron Burr mortally wounded former Treasury Secretary Alexander Hamilton in a pistol duel near Weehawken, N.J.
- 1859 Big Ben, the great bell inside the famous London clock tower, chimed for the first time.
- 1914 Baseball Hall of Famer Babe Ruth made his major league debut as a pitcher for the Red Sox at Fenway Park in Boston.
- 1955 The Air Force Academy was dedicated at Lowry Air Base in Colorado.
- 1960 "To Kill a Mockingbird," Harper Lee's Pulitzer Prize-winning novel, was published
- 1977 The Medal of Freedom was awarded posthumously to the Rev. Martin Luther King Jr. in a White House ceremony.
- 1979 The abandoned U.S. space station Skylab returned to Earth, burning up in the atmosphere and showering debris over the Indian Ocean and Australia.
- 1995 The United States normalized relations with Vietnam.

[http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL\\_SSint-page.htm](http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm)

