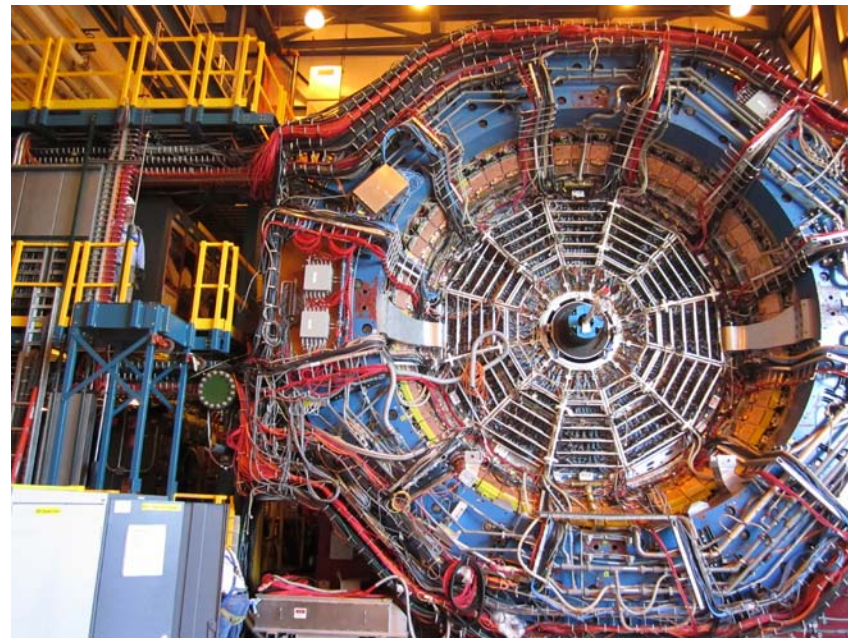


RHIC Coordination meeting

November 13, 2012

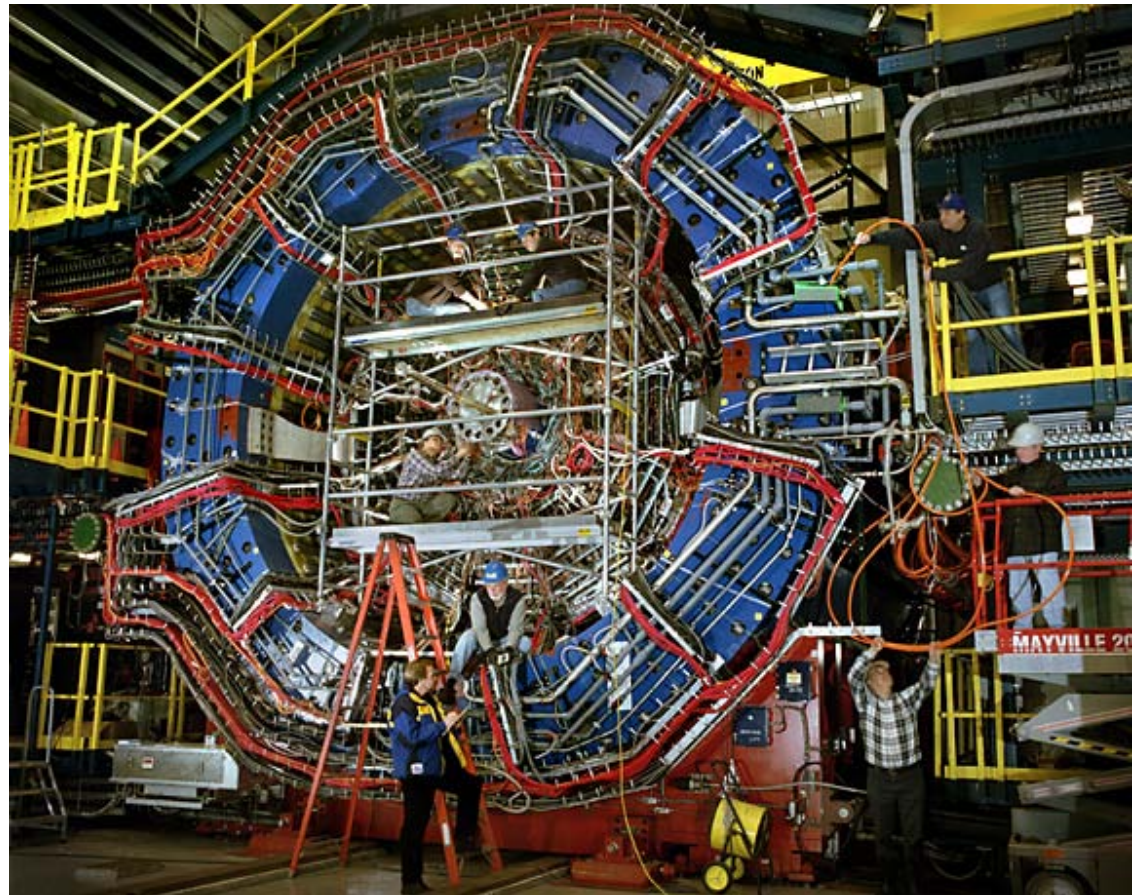
W.B. Christie

- Outline:
 - STAR efforts to date
 - Readiness for running pp2pp program
 - Remaining Shutdown Schedule
 - Scenario for running pp2pp program



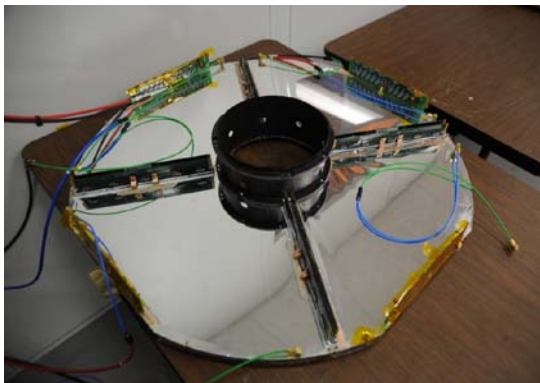
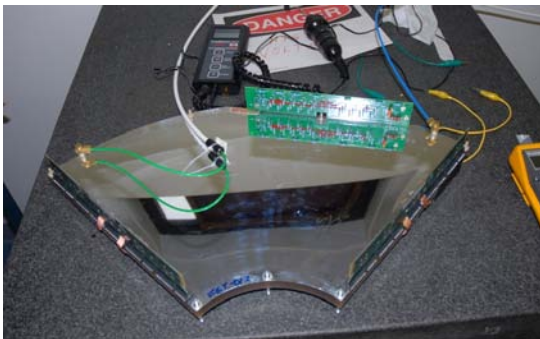
Detector Upgrade Projects currently underway:

- Forward GEM Tracker (FGT)
- Muon Telescope Detector (MTD)
- Heavy Flavor Tracker (HFT)
- Misc. updates (RCC, Scalers, TPC RDOs, etc.)



FGT:

- 16 of 24 Quadrants installed (4 of 6 disks) prior to IDS insertion.
- Cosmic Ray testing of last 8 quadrants underway.
- Schedule calls for completing installation, with STAR in IR, week of November 26th.
- Plan is to have complete FGT (6 disks, each populated by 4 quadrants) installed and operational for Run 13.



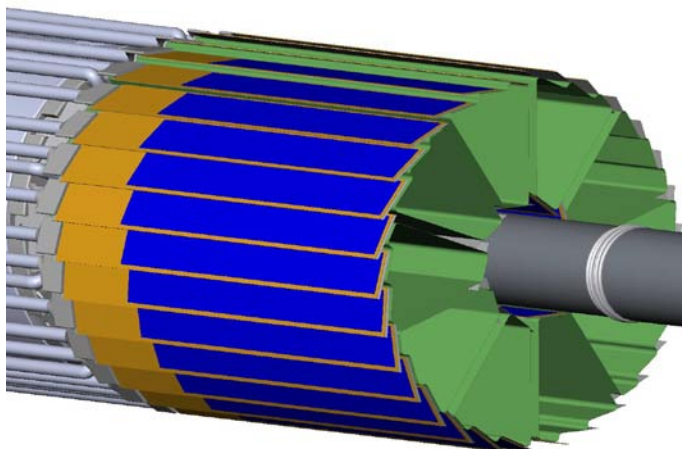
MTD:

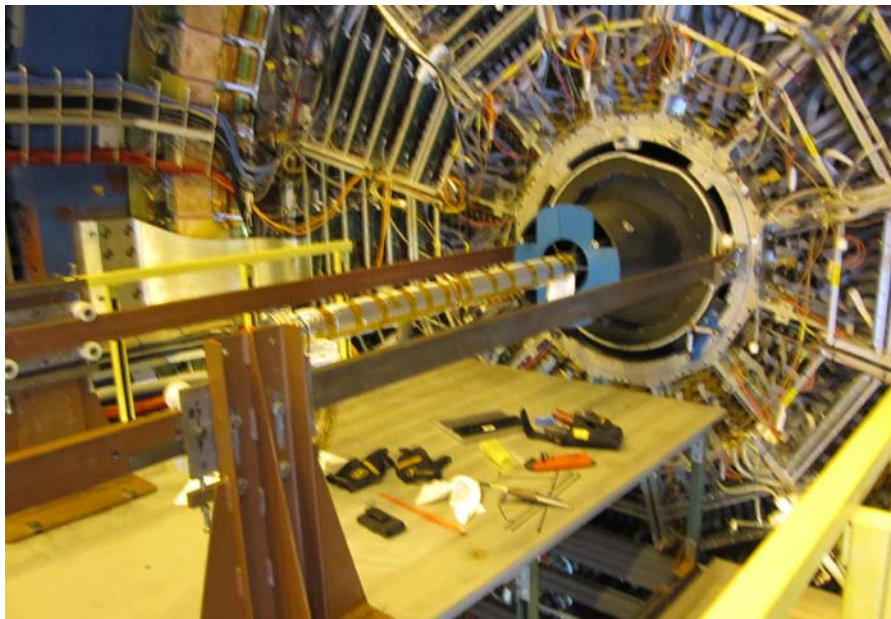
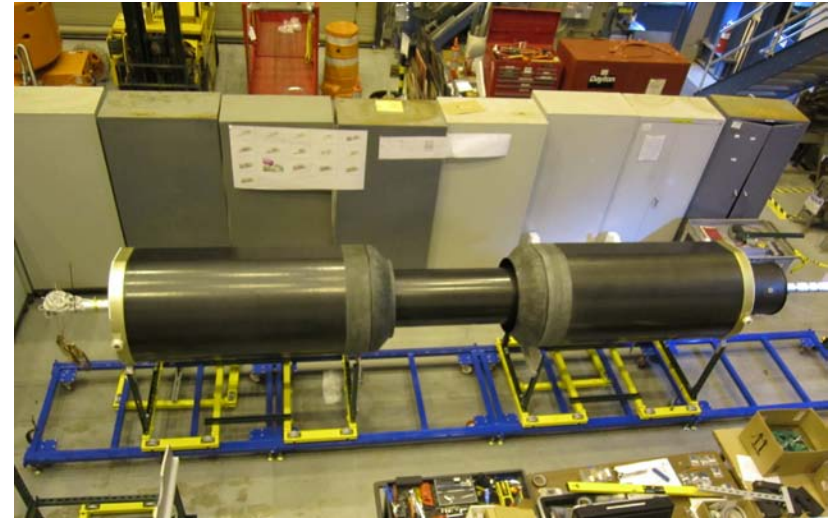
- 13 MTD modules installed and run for physics in Run 12.
- Installation of 62 additional MTD modules prior to Run 13.
- Most of the support systems (Gas, LV, HV, cabling) to be installed prior to Run 13.
- MTD project scheduled to be fully installed (118 Modules) and complete prior to Run 14.

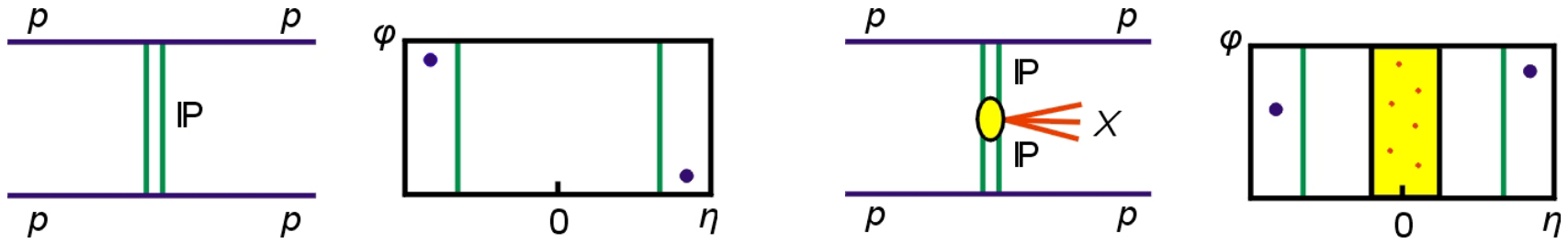


HFT:

- HFT and FGT both reside in/on the new HFT Inner Detector Support (IDS) carbon Fiber cone structure.
- Partial installation of new IDS structure prior to Run 12, bulk of the remainder of the IDS, along with new smaller diameter beam pipe, installed in September.
- New, smaller diameter beam pipe installed along with IDS for Run 13.
- New Pixel (PXL) installation platform procured, successful test PXL installation in October.
- Plan is to have a commissioning run with up to 3 prototype PXL sectors (10 in complete system) during Run 13.
- Plan is to install complete HFT (PXL, IST, & SSD) prior to Run 14.

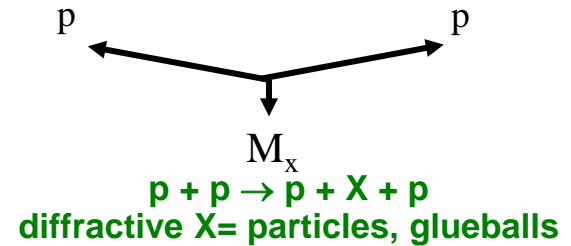






$p + p \rightarrow p + p$ elastic

At $\sqrt{s}=510$ GeV, $\beta^*= 7.5$ m and transverse polarization



- Total cross section σ_{tot} , nuclear slope B
- Central Exclusive Production (CEP)
- A_N and A_{NN}

Status:

1. Testing of Si detectors will start this week. Installation in the tunnel by early January.
2. Testing with STAR January => expect to be ready for check with the beams by the start of cooldown.

Running Scenario

1. Beam development is about 2 shifts;
 2. Need beam to check timing, triggers, etc... as they evolved in the last three years;
 3. Luminosity $\sim 10^{30} \text{cm}^{-2} \text{sec}^{-1}$ at $\sqrt{s}=510$ GeV ($\beta^*=9$ m);
 4. Data taking 3 shifts at $\sqrt{s}=510$ GeV for elastic – and as much as possible for CEP (5 + shifts)=> 50% efficiency => 10 shifts ~4 days;
1. One shift of APEX to measure optics using Roman Pots (has been done at the LHC) would be very helpful;
 2. How to execute the run most efficiently would be up to RHIC community and guidance from C-AD.

November 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 Sub system checkout/maint. Can proceed all month	2	3
4	5 Remove East Poletip	6 End of ~ 6 wk MTD module installation	7	8	9	10
11	12 BNL Holiday	13	14	15 ← Remove 6(?) TOF trays →	16 Reinstall 2 TOF trays	17
18	19 ← Replace four TOF trays with GMT/TOF trays →	20	21	22 BNL Holiday	23 BNL Holiday	24
25	26 ← Prepare for FGT Installation → PXL cooling system arrives at BNL	27	28 ← Completion of FGT quadrant installation → Perform TPC RDO work on East TPC face	29	30	

Holidays and Observances: 11: Veterans Day, 12: 'Veterans Day' observed, 22: Thanksgiving Day

December 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
	← FGT testing →		← Certify Interlocks →			
			← Installation of West & East Beampipes, start setup for bake out →			
9	10	11	12	13	14	15
	Install E Poletip Install PXL platform	PXL/Bakeout setup	← Beam Pipe Bake out →			
16	17	18	19	20	21	22
		← Install the shield wall. →			Complete TPC RDO work on West face of TPC	
23	24	25	26	27	28	29
	BNL Holiday	BNL Holiday		Install W. Poletip		
30	31					

Holidays and Observances: 25: Christmas Day

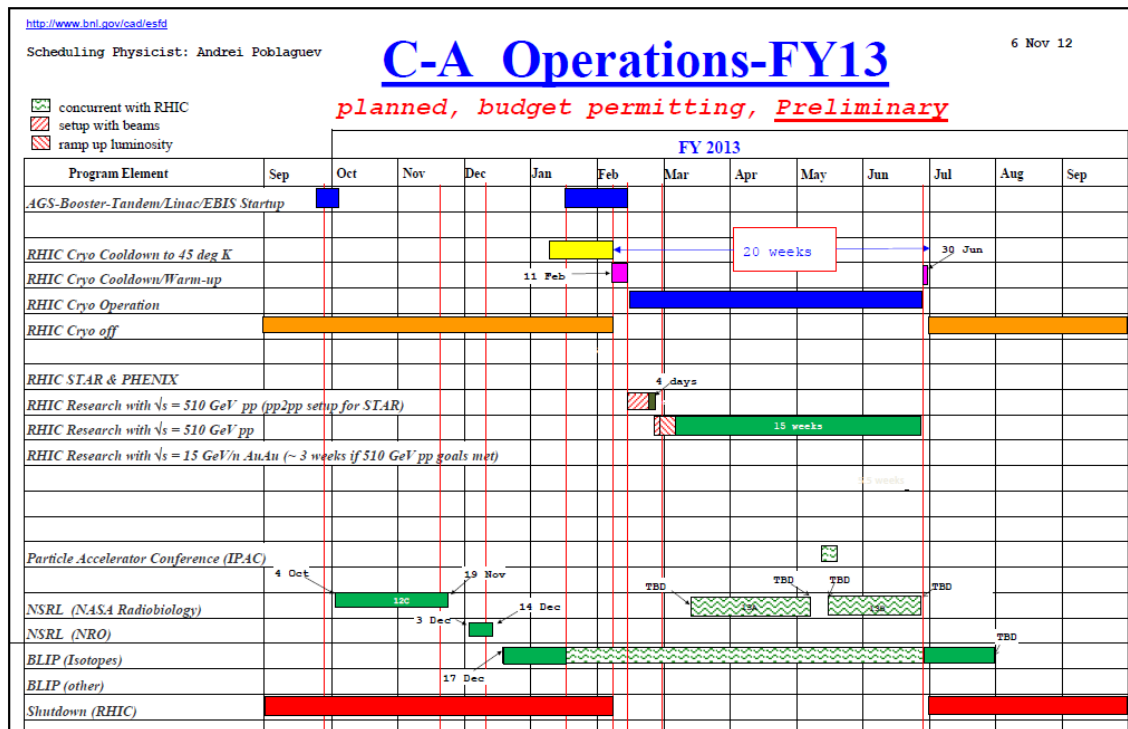
January						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 BNL Holiday	2	3	4 EEMC Maintenance	5
6	← 7	8	9	10	11 →	12
	EEMC Maintenance					
13	← 14	15	16	17	18 →	19
	Sub system Checkout, and Full system testing					
20	21 BNL Holiday	← 22	23	24	25 →	26
		Sub system Checkout, and Full system testing				
27	← 28	29	30	31	→	
				Start Mag. H ₂ O		
	Sub system Checkout, and Full system testing					

Holidays and Observances: 1: New Year's Day, 21: Martin Luther King Day

February						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
					←→	
3	4	5	6	7	8	9
	←→					
	MAG. P.S. testing & Heat Run			TPC HV chk with Mag. on	Install BBCs	
10	11	12	13	14	15	16
	Start RHIC Cool down					
17	18	19	20	21	22	23
24	25	26	27	28		

Holidays and Observances: 14: Valentine's Day, 18: Presidents' Day

- Commission Collider and Experiments for 510 GeV pp physics run
- At some point after the 510 pp physics run is established and running, shift operations to run the pp2pp physics program.
- Complete the pp510 physics running
- With any remaining time, commission and run a 15 GeV AuAu program. If possible, duration of ~ 3 weeks desirable.



- STAR is in the midst of a busy shutdown plan/schedule to install new systems into the detector in preparation for Run 13, as well as to perform the usual maintenance on the existing sub systems.
- STAR will be ready for the Scheduled RHIC Cooldown date of February 11th.
- STAR's preferred running scenario would sandwich the pp2pp run sometime during the pp 510 running, but after stable collider and detector operations are established.

First Draft of STAR FY2012 Shutdown Plan/Schedule. May 4, 2012.

July 2012						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2 Roll out process Begins Remove BBCs	3 Remove E&W Poletips	4	5 Install Scaffolding Blowout Coils	6 Remove top MTDs as/if needed.	7
8	9 Remove Magnet Water pipes, start disconnecting cables	10 Remove shield wall	11	12 Remove Power Bridge, remove MCW pipes	13 Remove stairs & Bridge, Prepare Hydraulics	14
15	16 Roll STAR out	17 Install stairs & Bridge	18 Install Platform for cone removal, Install Power and MWC water.	19 Remove IDS cone	20	21
22	23 Disassemble IDS	24 WSC + FGI into Clean Room, begin ~3 week FGI install. Effort ends 8/13	25 TPC Prom replacement and Trigger cable installation can begin	26 BEMC work in PMT boxes can/should begin	27 MTD cable and gas line installation can begin	28
29	30 Remove 4 TOF trays to be replaced with TOF/GMT trays, and Tray 95	31				

Holidays and Observances: 4: Independence Day

L Sampled Fraction

