

RHIC Machine/Detector Planning Meeting

16 Feb 05

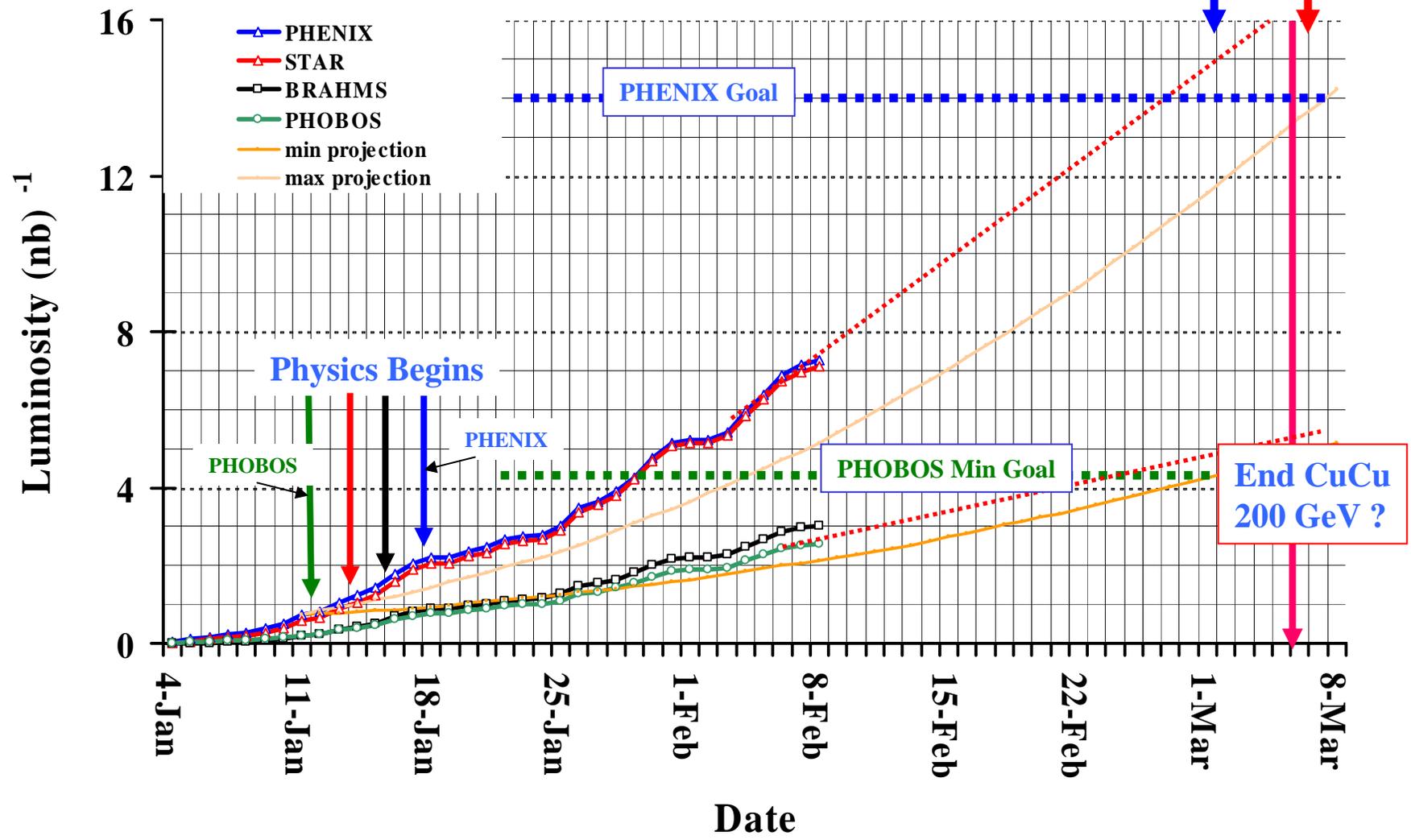
Agenda

- **Schedule Issues – (Montag)**
- **Report from experiments (STAR,PHOBOS,PHENIX,BRAHMS)**
 - **Progress toward goals - plot that shows goal(s) and progress toward goal(s).**
 - **Toward finalizing the CuCu schedule**
 - **Other**
- **Report from Accelerators (Pilat)**
- **Polarized Proton Update (Bai)**
- **RCF Issues (Throwe)**
- **Other business**

Planning Meeting Web Site: http://www.c-ad.bnl.gov/esfd/RMEM/rhic_planning.htm

RHIC Run 5 Delivered Cu-Cu Luminosity

PHENIX and STAR
Estimate when goals will
be reached



C-A Operations-FY05

Schedule - subject to change

-  pending approval/funding
-  schedule to be determined
-  setup/ramp up luminosity

FY 2005

Program Element	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
AGS-Booster-Tandem/Linac Startup													
				← 32 weeks →									
RHIC Cryo Cooldown/switch to LN ₂													
RHIC Cryo Operation													
RHIC Cryo off													
RHIC Systems Test (no colliding beams)													
RHIC with colliding beams													
RHIC Research with Cu-Cu (100x100 GeV/n)													
RHIC Research with Cu-Cu (31x31 GeV/n)													
RHIC Research with Cu-Cu (11x11 GeV/n)													
RHIC Research with p-p (100x100 GeV)													
	p,O(2),Si,Fe(2),Ti							p,C,O,Si,Fe(2)					
NSRL (NASA Radiobiology)													
AGS (NASA)													
Shutdown (RHIC)													

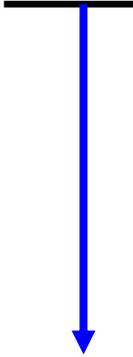
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- *RHIC Run5 Plan (estimate based on present understanding of budget)*
 - 18 Nov 04 – Cool down begins
 - 23 Nov 04 – Blue Ring Cold
 - 28 Nov 04 – Yellow Cold
 - 29 Nov 04 – Short in D6-D8 dipoles Yellow Ring, schedule delay
 - 3 Dec 04 – quad bus-bus short in sector 12, shutdown to repair
 - 27 Dec 04 – short problem resolved, rings at 4 degrees again
 - 27 Dec 04 - “2 week” RHIC setup with beam began
 - 28-29 Dec 04 – found & fixed aperture problem in Yellow Ring (Al foil)
 - 5 Jan 05 – “2 week” ramp-up with colliding beams began
 - 11 Jan 05 – *Physics with Cu-Cu began*
 - 25 Mar 05 – End of 10.3 week Cu-Cu run
 - 24-25 Mar 05 – Jet Installation etc
 - 25 Mar 05 – begin 3 week pp setup
 - 15 Apr 05 – Begin 10.1 week pp Physics run
 - 25 Jun 05 – end pp run, RHIC Run 5 ends
 - 30 Jun 05 – Cryo switch to LN₂ complete, 32.0 weeks of RHIC cryo operation ends

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- **Details – as run/planned**

- *11 Jan – Physics with Cu-Cu began*
- *7 Mar – end 200 GeV/n Cu-Cu*
- *7-8 Mar Cu-Cu Physics at RHIC Injection*
- *8-11 Mar – Setup 62.4 GeV/n Cu-Cu*
- *11-24 Mar - 62.4 GeV/n Cu-Cu Physics – end 10.3 week CuCu run*
- *24-25 (Thu-Fri) Mar 05 Jet Installation etc*
- *25 Mar – begin 3 week pp setup*
- *15 Apr – Begin **10.1** week pp Physics run*
- *25 Jun – end pp run, RHIC Run 5 ends*
- *30 Jun – Cryo switch to LN₂ complete, **32.0** weeks of RHIC cryo operation ends*
- **From Mai Bai the cold snake is delayed till Mar 16. So it will be installed during the switch over to pp running.**



To be finalized

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Experiment Requests

(based on 2 Feb input from experiments)

- **PHOBOS**

- Goal 10 nb⁻¹ Delivered Luminosity (1B events)
 - 0.4B events considered adequate (~ 4 nb⁻¹ Delivered)
 - Recorded Luminosity/Delivered ~ 25%
 - Delivered Luminosity offset (Physics start 12 Jan) = 0.2 nb⁻¹
- Prefer uptime to Luminosity development
- Strongly request 2-3 week 62.4 GeV CuCu run
- Strongly request 1 day of CuCu at injection (22.4 GeV)

- **PHENIX**

- 7 week (to 2 Mar) CuCu 200 GeV should reach goal
 - Recorded Luminosity/Delivered ~ 24%
 - Delivered Luminosity offset (Physics start 18 Jan) = 2 nb⁻¹
 - Goal Delivered Luminosity = 12 nb⁻¹
- Prefer Luminosity development continue through ~ 11 Feb
- Request 2 week 62.4 GeV CuCu physics run (very interested)

Experiment Requests

- **BRAHMS**

- Soft Physics goal 2 nb^{-1} Delivered
 - Recorded Luminosity/Delivered ~ 0.4
- High-pT goal 4 nb^{-1} Delivered (runs after completion of soft physics)
 - Delivered Luminosity offset (Physics start 16 Jan) = 0.5 nb^{-1}
 - Recorded Luminosity/Delivered ~ 0.4 (?)
- Luminosity development and/or β^* reduction important
- Request minimum 2 week 62.4 GeV CuCu run

- **STAR**

- 8 week (to 7 Mar) CuCu 200 GeV assumed
 - Recorded Luminosity/Delivered *not specified*
 - Min-Bias Delivered Luminosity offset (Physics start 14 Jan) = 1 nb^{-1}
 - Rare Trigger Delivered Luminosity offset (Physics start 31 Jan) = 5 nb^{-1}
 - Goal Delivered Luminosity = *not specified*
 - Prefer uptime to Luminosity development
 - Request 10-14 days 62.4 GeV CuCu physics run
 - Supports 1 day (or more) collisions at injection

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17 November 2004

Purpose of this meeting:

- To address issues and priorities relating to the optimization of physics output from RHIC experiments.
- To discuss and promulgate policy (when needed).

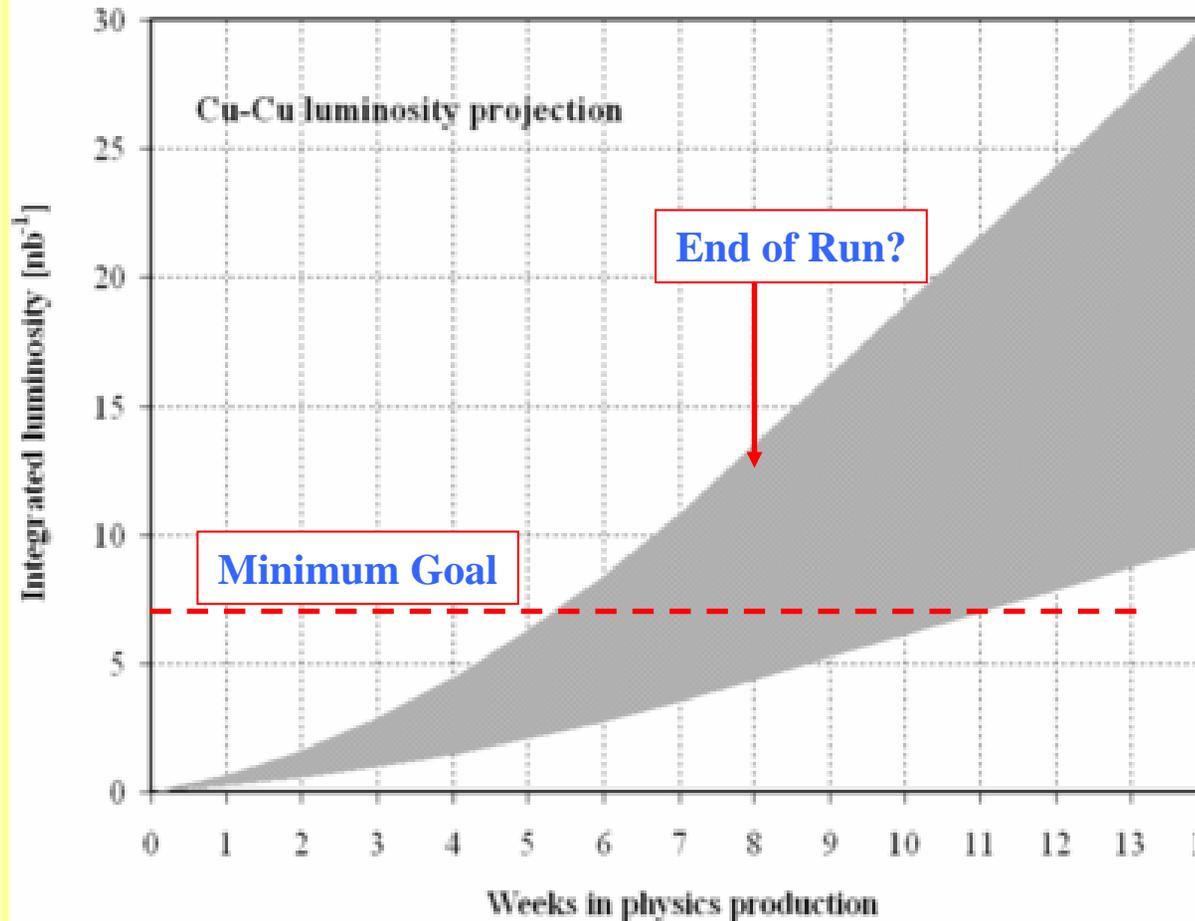
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PAC Recommendations (very short summary):

- 8-10 week pp run should have highest priority
- Cu-Cu run should accumulate an integrated delivered luminosity of at least 7 nb^{-1} at $\sqrt{s} = 200 \text{ GeV}$
- Cu-Cu at $\sqrt{s} = 62.4 \text{ GeV}$ and 1 day at injection is advisable if above goals are met
- 1-2 day pp (unpolarized) run at $\sqrt{s} = 400\text{-}500 \text{ GeV}$ desirable

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Projections based on the following beam intensity:

Minimum :
 $45 * 2.9 \times 10^9$

Maximum:
 $28 * 6.6 \times 10^9$

Luminosity evolution:
8 weeks ramp-up during physics production

$\beta^* = 1$ meter