

RHIC Status

Wolfram Fischer



RHIC & AGS Open Forum
Hamilton Seminar Room
21 November 2003

1. Run-4 goals
2. Machine improvements for Run-4
3. RHIC current status

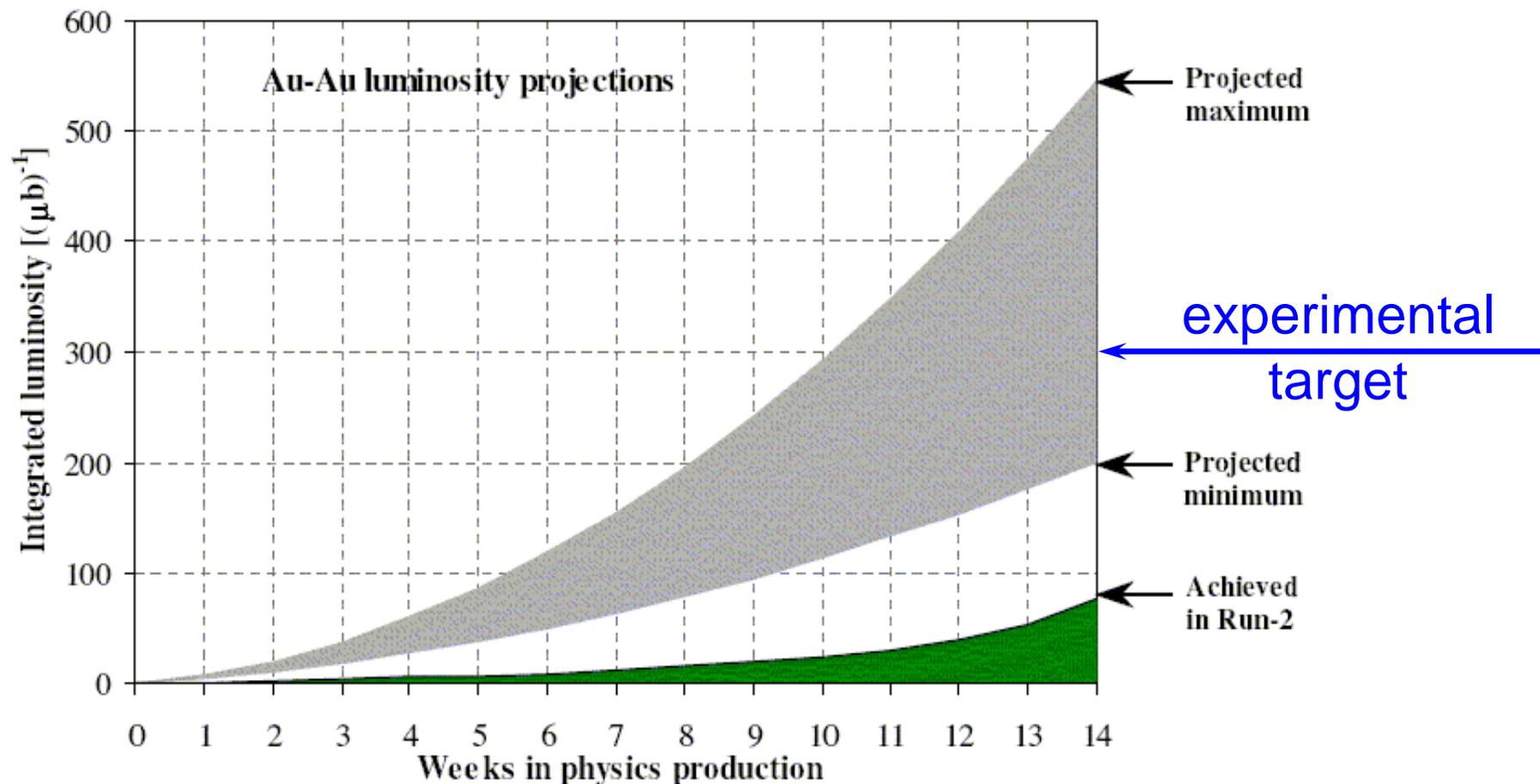
- President's budget allows for 27 weeks of cryogenic operation (need 3 weeks for cool-down and warm-up)
- Run-4 modes:
 1. 5+14 weeks Au-Au at 100GeV/u beam energy, target luminosity of $300(\mu\text{b})^{-1}$ delivered
 2. 5 weeks p \uparrow development (partial warm AGS snake, gas jet, working point)
 3. If 5 more weeks Au-Au at 31GeV/u beam energy (allows comparison with ISR data)
 4. If even 5 more week, p-p luminosity production

- Beam into Blue : 24-Nov-03
- Beam into Yellow : 28-Nov-03
- Lattice for Run-4

β^* [m]	IP2-4-6-8-10-12
injection	10-10-10-10-10-10
transition	5-5-5-5-5-5
storage	3-5-1-1-3-5



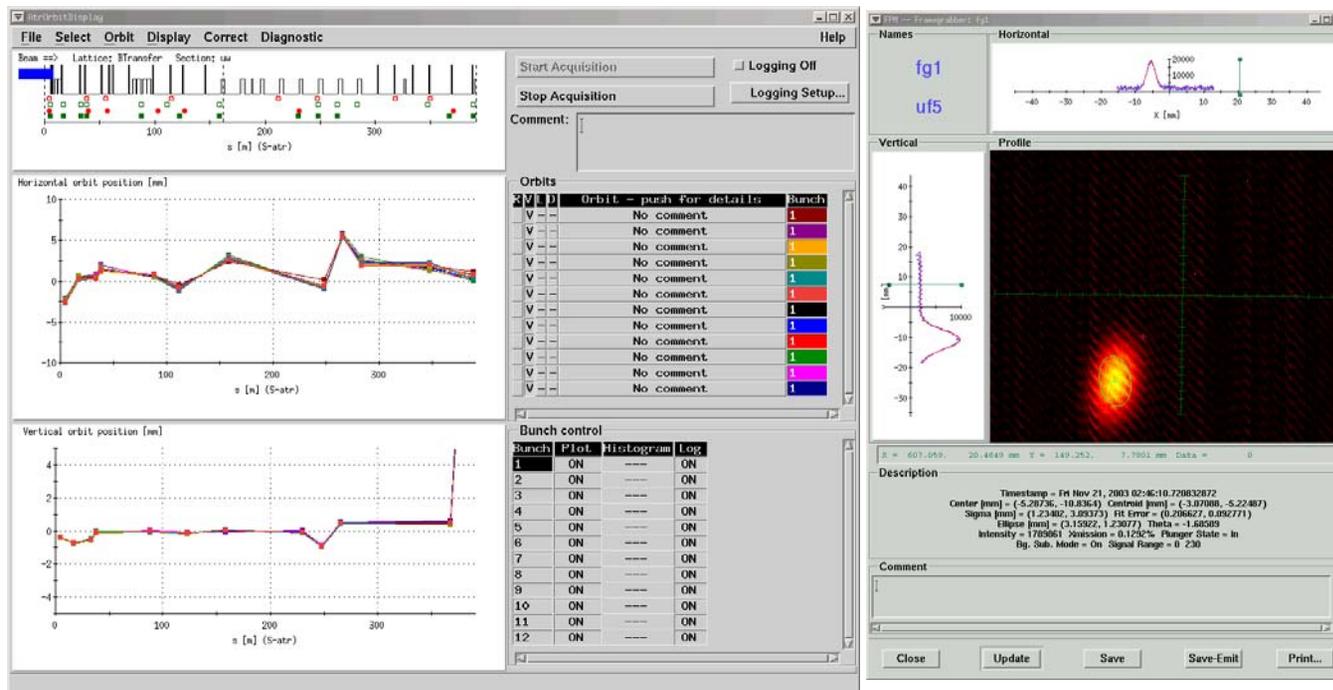
- 1st time at top rigidity with 2 IRs at $\beta^*=1\text{m}$



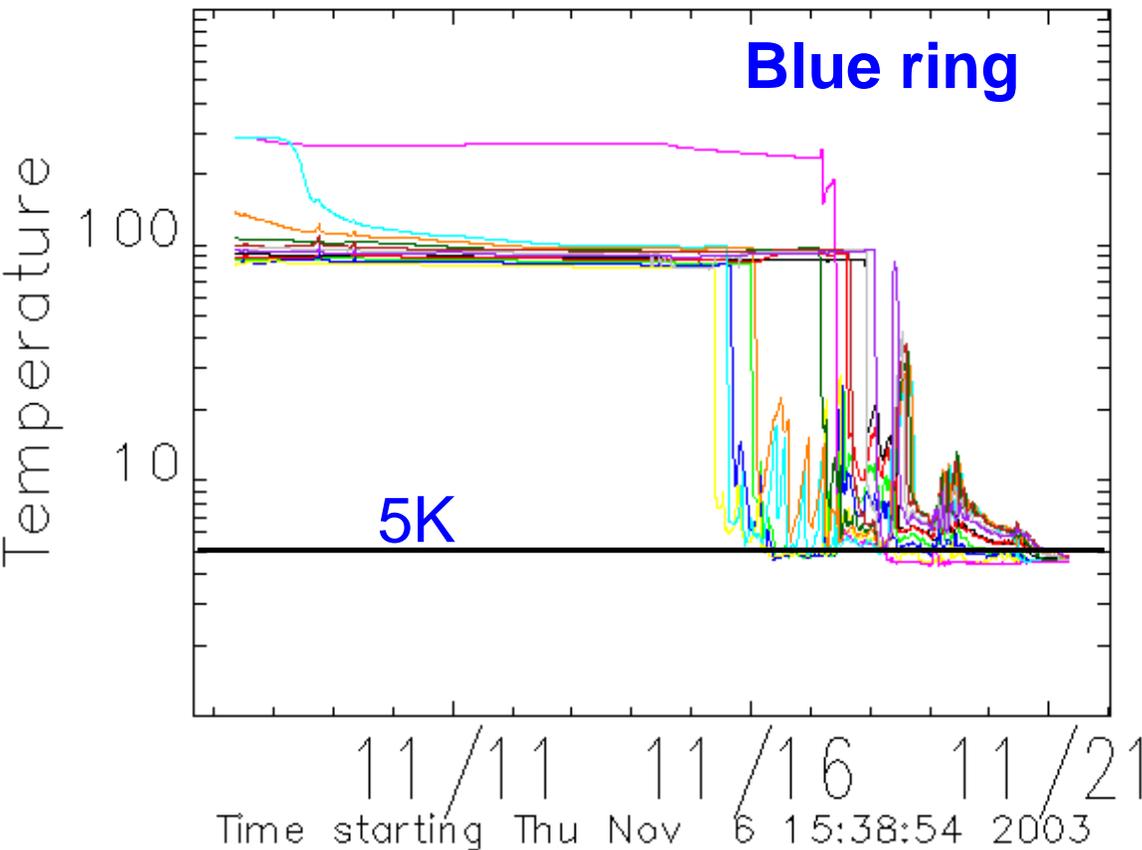
[After 5 weeks of start-up and ramp-up]

1. **Bunch intensity increases**
→ Extra bunch merge in Booster (M. Brennan, M. Blaskiewicz, ...)
2. **Collimation**
→ Secondary collimators in both rings (A. Drees, ...)
3. **Shielding**
→ More shielding at Phenix and Brahms (K. Yip, C. Pierson, ...)
4. **Vacuum**
→ More baking, NEG coated pipes (D. Hseuh, S.Y. Zhang, ...)
5. **BPMs**
→ Better TBT data, DX BPMs (T. Satogata, P. Cameron, ...)
6. **Reduced recovery and maintenance time**
→ Quenches, ice balls, faster down ramps, AtR cooling, ...
(M. Bai, G. Ganetis, D. Bruno, A. Pendzik, ...)
7. **Faster and more convenient operations tools**
→ Ramp analysis, less clicks, ... (J. van Zeijts, G. Marr, T. Satogata, ...)
→ More automation (steering, collimation, gap cleaning, ...)

- Installations to be finished next Tuesday (Phenix shielding, some instrumentation)
- Au beam accelerated in AGS and transported to W-dump in AtR



Au beam in AtR,
3am this morning



(8:30am today)

Blue cool-down status

- all temperatures below 5K
- faster than anticipated (new technique)
- PS work about to begin (checkout, DX training, faster down ramps)
- expect fully conditioned ring Monday night
- start beam Monday night

Yellow cool-down status

- at 80K
- cool-down to 4K about to start
- expect PS work to begin around 28 November
- first beam same night

Current timeline

(subject to change – had unforeseen events in the past)

21-Nov	Blue cold
24-Nov	12 access (Phenix shielding, instrumentation)
24-Nov	Beam into Blue
25-Nov	12 access (Phenix shielding, instrumentation)
28-Nov	Yellow cold
28-Nov	Beam into Yellow (assumed 1-Dec earlier)
	2 weeks of set-up begin
	(experimental magnets needed as soon as ramp set up begins)
12-Dec	3 weeks of ramp-up begin
	priority for machine development
	try to provide collisions for experimental setup over night
2-Jan	Luminosity production starts