

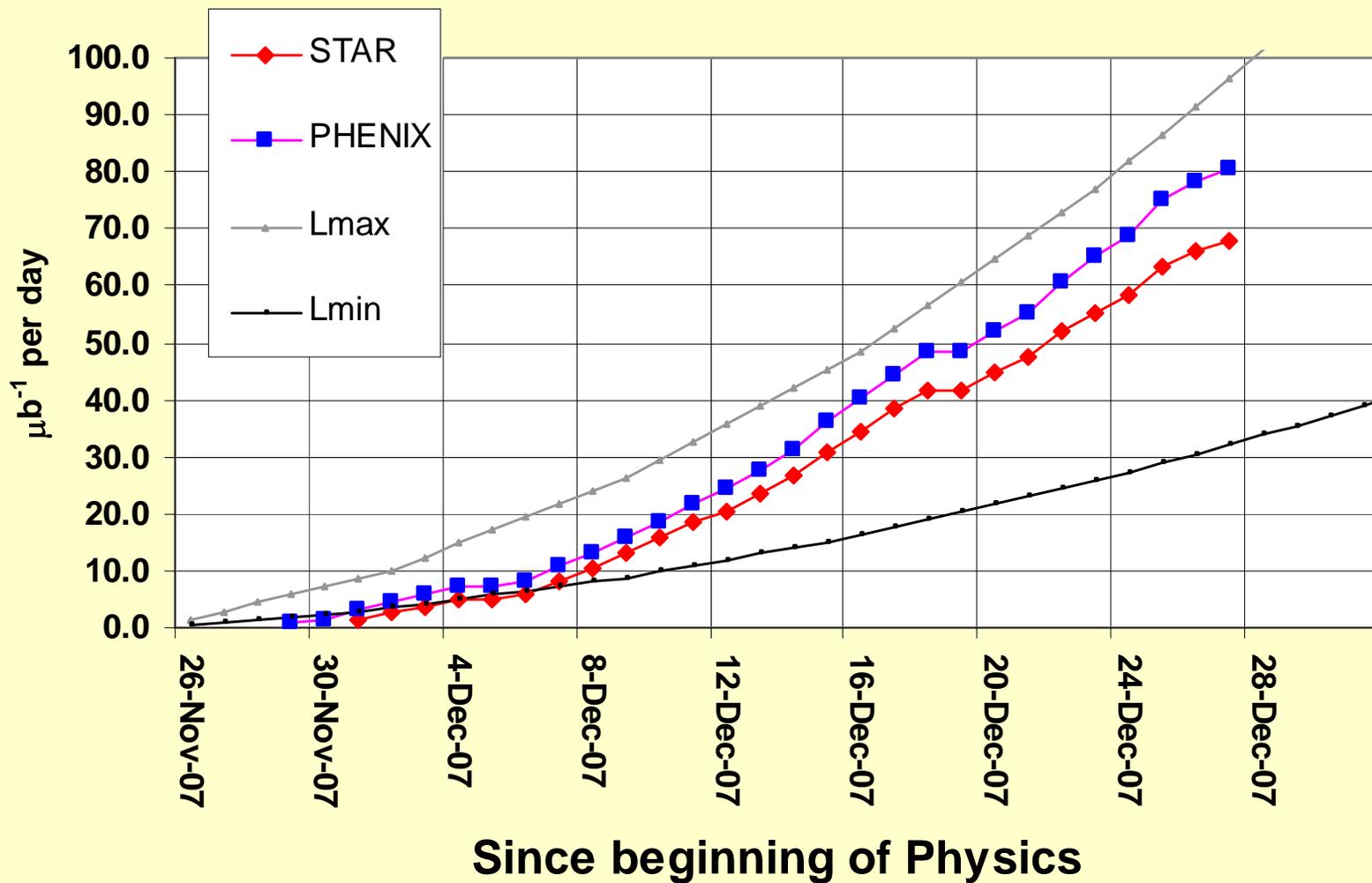
# RHIC Machine/Detector Planning Meeting

28 Dec 07

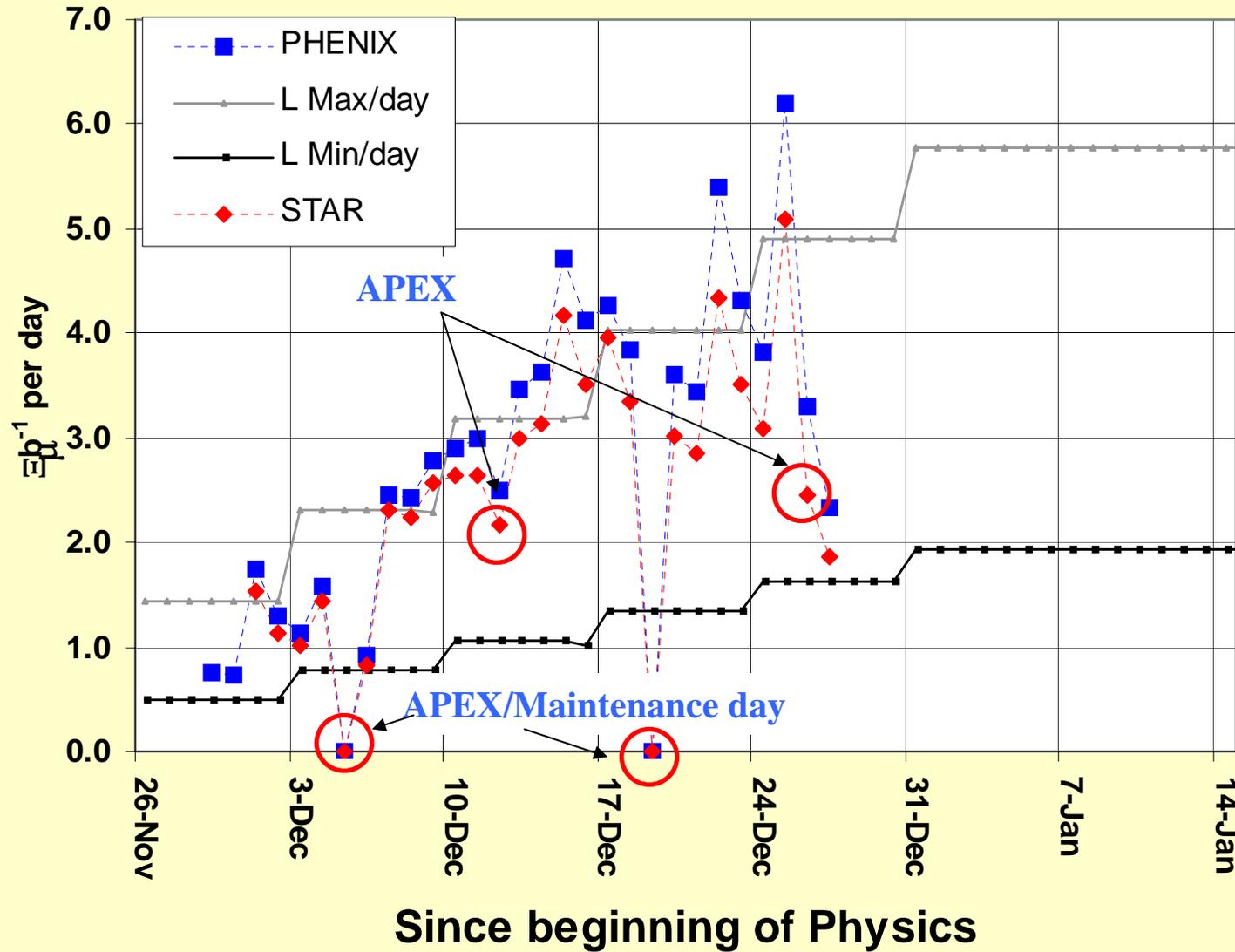
## Agenda

- pp projections at 500 GeV (C. Montag)
- dAu Experiment goal projections
- Experiment proposals: what to do next if \$'s run out by end of Feb (begin cryo warmup Tuesday 26 Feb)

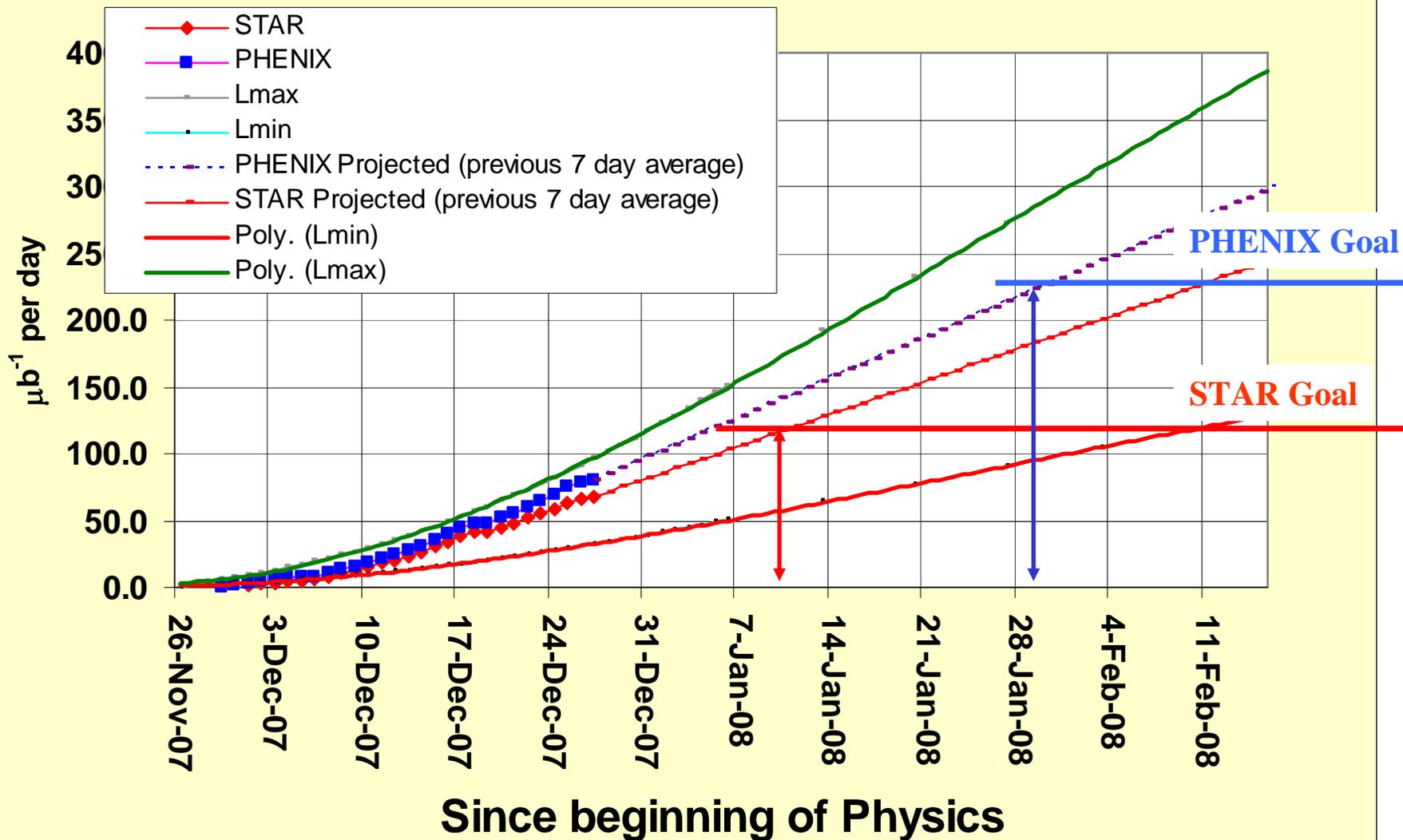
# Run8 RHIC dAu Integrated Luminosity for Physics



# Run8 RHIC dAu Available Luminosity per day



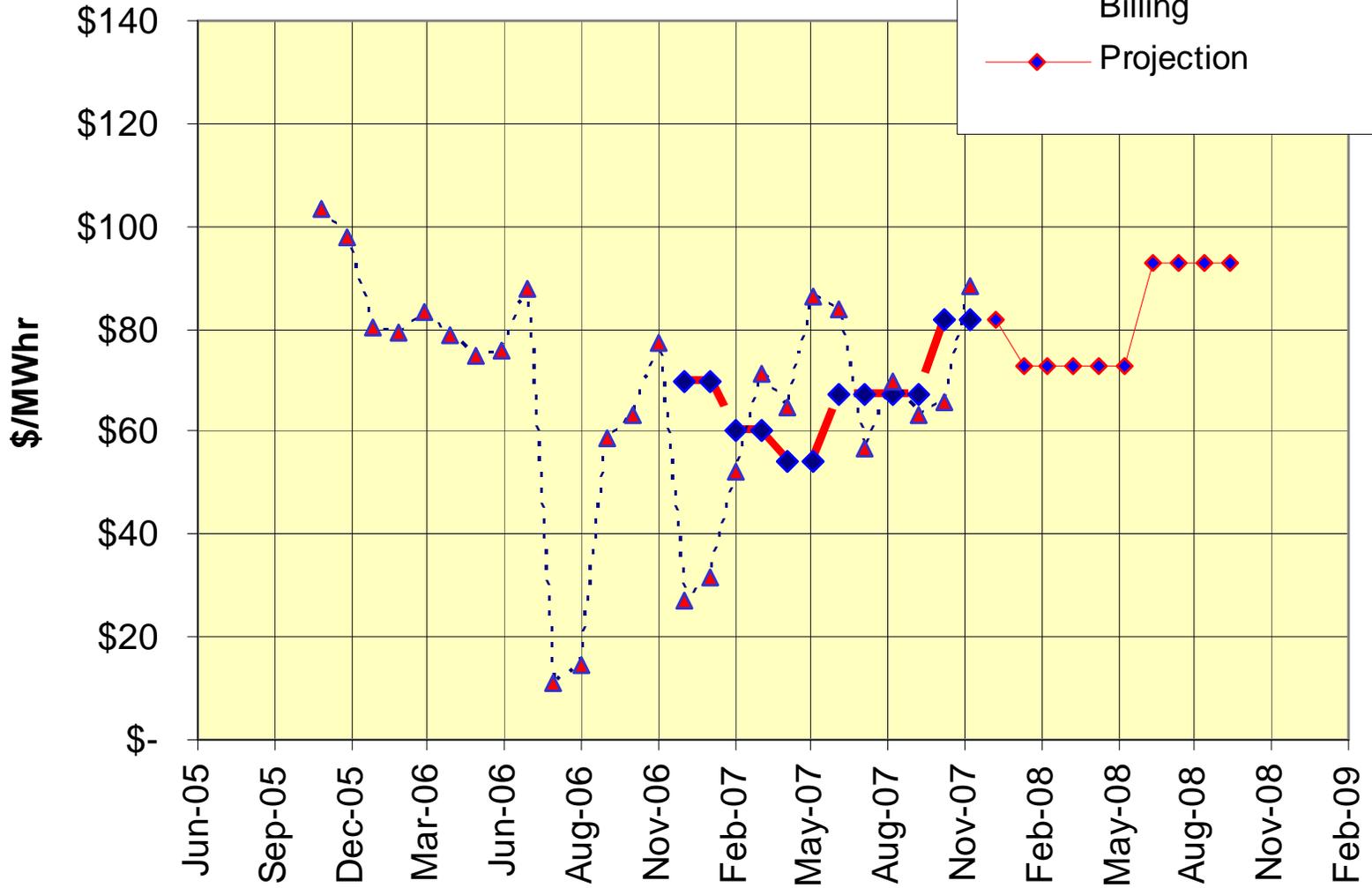
# Run8 RHIC dAu Integrated Luminosity for Physics



Through Nov 2007

### FY 2006-7 Power Bill

- With Balanced Billing
- Without Balanced Billing
- Projection



# RHIC Machine/Detector Planning Meeting

## Next Meeting

??

## Experiments luminosity goals for Run 8, 100 x 100 GeV pp

### – PHENIX

- Delivered luminosity = **140 nb<sup>-1</sup>**
- Recorded luminosity = **35 nb<sup>-1</sup>**
  - Longitudinal Polarization goal: **26 nb<sup>-1</sup>**
  - Transverse polarization luminosity goal: **9 nb<sup>-1</sup>**
- Assumed efficiencies: **48% vertex, 64% up, 82% live → 25% overall**
- Assumed polarization: **65%**
- Approximate physics weeks: **12**

### – STAR

- Delivered luminosity = **90 nb<sup>-1</sup>**
  - Longitudinal polarization goal: **60 nb<sup>-1</sup>**
  - Transverse polarization luminosity goal: **30 nb<sup>-1</sup>**
- Slow detector sampled luminosity (Transverse and Longitudinal) = **30 nb<sup>-1</sup>**
- Assumed efficiencies: **50% uptime, 65% live → 33% overall**
- Assumed polarization: **65%**
- Approximate physics weeks: **12**
  
- pp2pp: **3 days of dedicated running**
- Goals: **20M elastics, 300K double pomeron exchange events**

An issue: In 2006 it took 6 weeks of physics running to get from ~45% polarization to ~60% polarization, above goals assume 65% from physics day 1

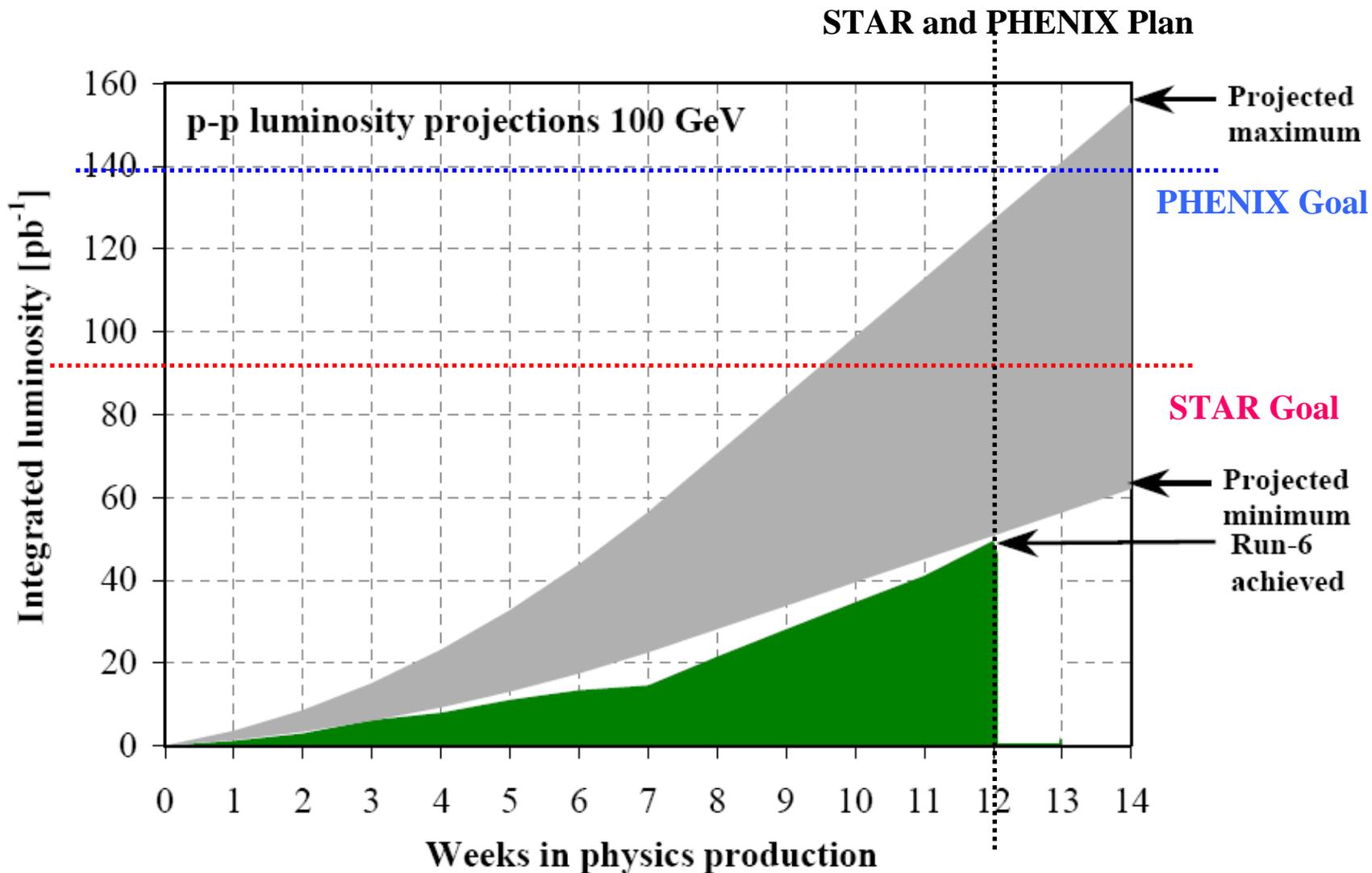


Figure 3: Projected minimum and maximum integrated luminosities for polarized proton collisions at 100 GeV beam energy, assuming linear weekly luminosity ramp-up in 8 weeks. An average store polarization of 65% is expected.

(last update 10/23/07)

## Experiments luminosity goals for Run 8 100 x 100 GeV/n d-Au

### – PHENIX

- Delivered luminosity = **230** nb<sup>-1</sup>
- Recorded luminosity = **58** nb<sup>-1</sup>
- Assumed efficiencies: 48% vertex, 53% live → **25% overall**
- Approximate weeks: 10

### – STAR

- Delivered luminosity = **120** nb<sup>-1</sup>
- Fast Detector sampled luminosity = **60** nb<sup>-1</sup>
- Slow Detector sampled luminosity = **30** nb<sup>-1</sup>
- Fast detector overall sampling efficiency = **50%**
- Approximate weeks: 10

### – Monopole Proposal – Detector Tests

- Once ~ 20:1 signal to background is achieved in building 902, move to 10:00 IR, reestablish good signal to background and then request collisions

## STAR and PHENIX Plan

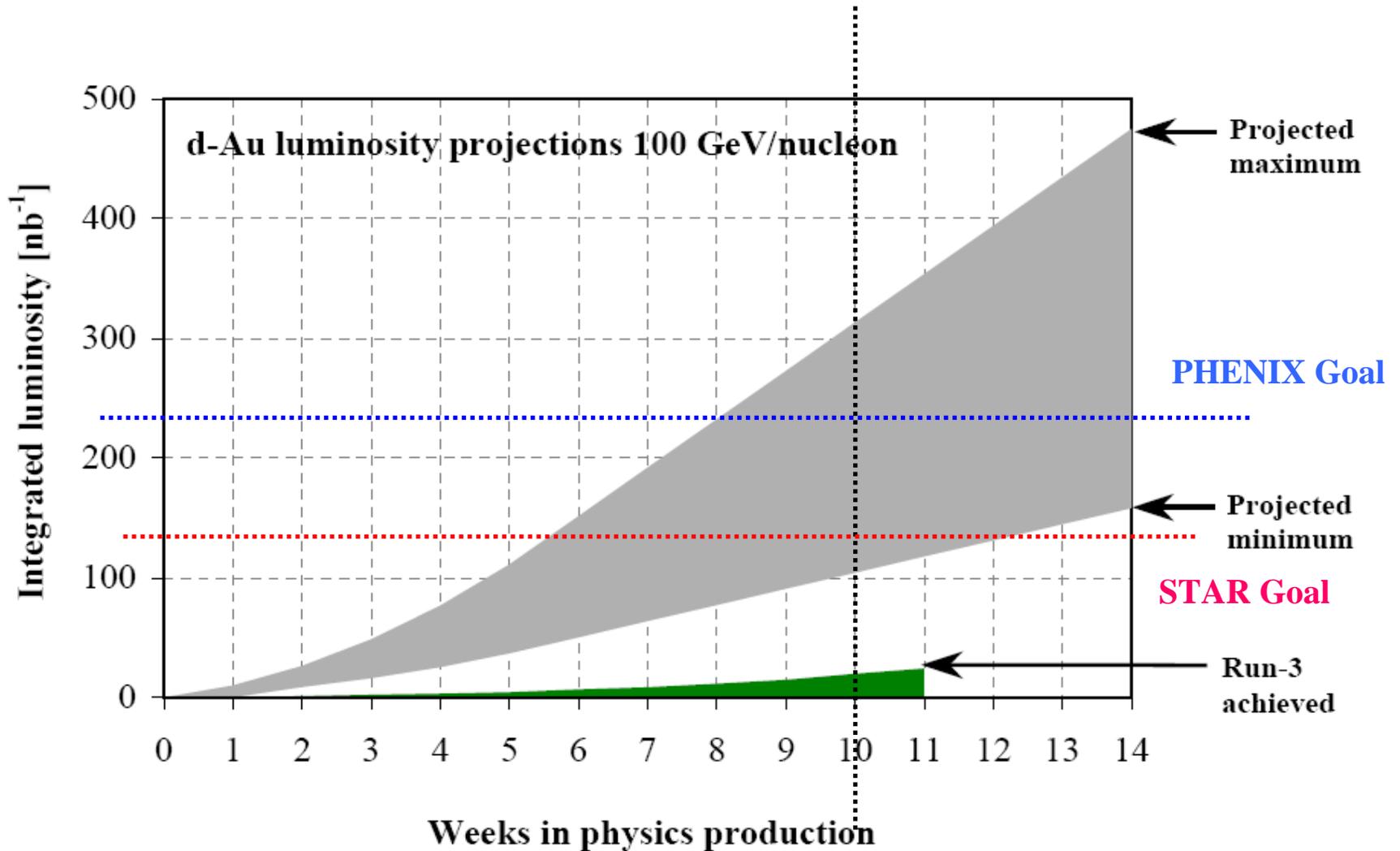


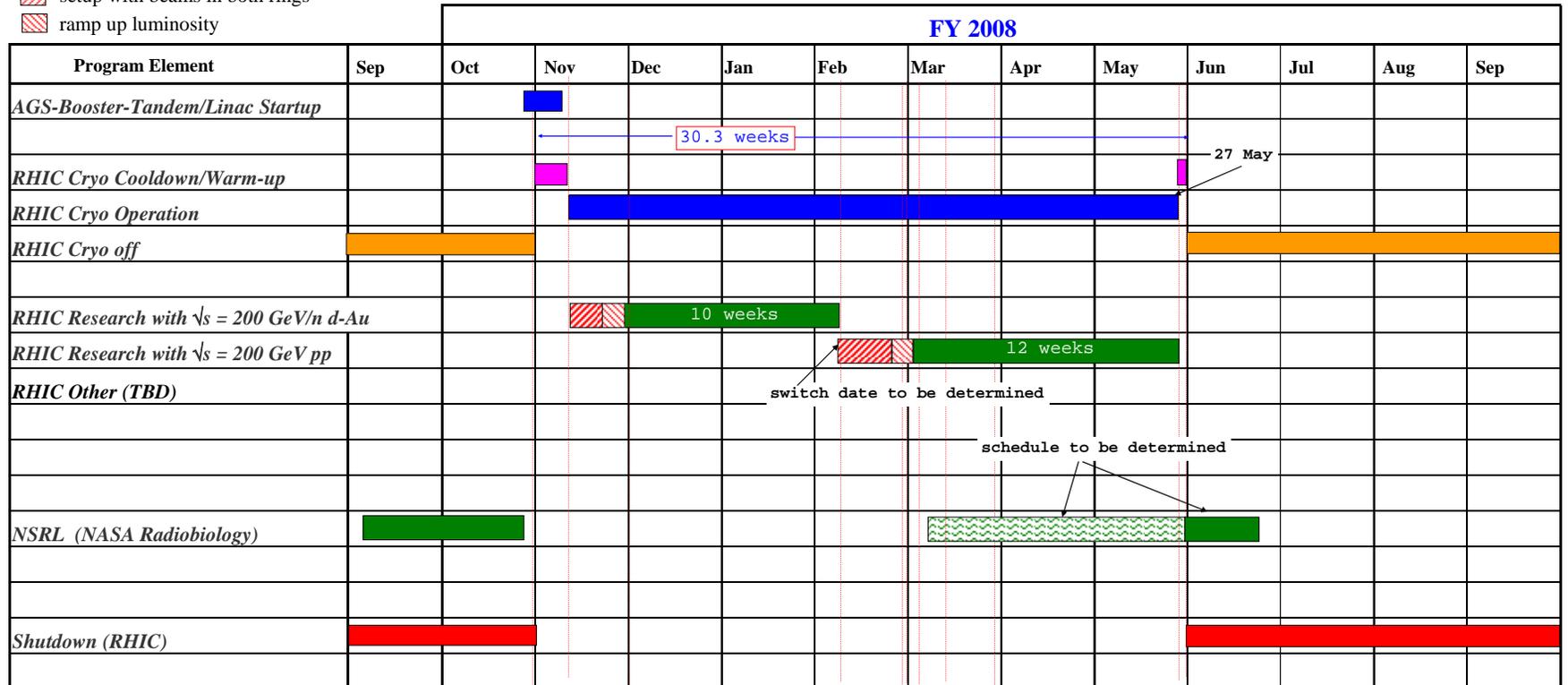
Figure 2: Projected minimum and maximum integrated luminosities for deuteron-gold collisions at 100 GeV/nucleon beam energy, assuming linear weekly luminosity ramp-up in 6 weeks.

# C-A Operations-FY08

1 Oct 07

*Planned, subject to change*

-  concurrent with RHIC
-  setup with beams in both rings
-  ramp up luminosity



# Fischer et.al. Possible 30 week run schedule

Cool-down from 80 K to 4 K	1 ½ week
Set-up mode 1 (d-Au)	1 ½ weeks
Ramp-up mode 1	1 week
Data taking mode 1 with further ramp-up	11 weeks
Set-up mode 2 (p↑-p↑)	2 ½ weeks
Ramp-up mode 2	1 week
Data taking mode 2 with further ramp-up	11 weeks
Warm-up	½ week