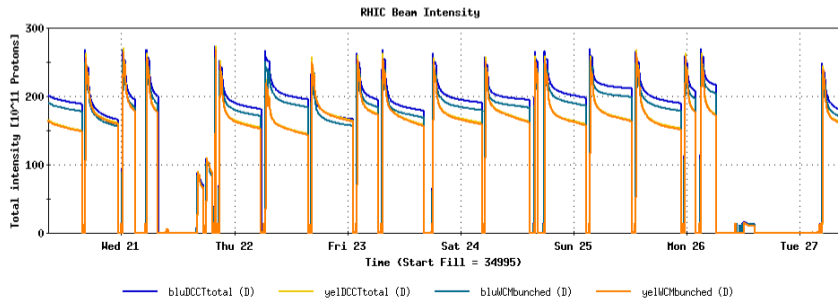
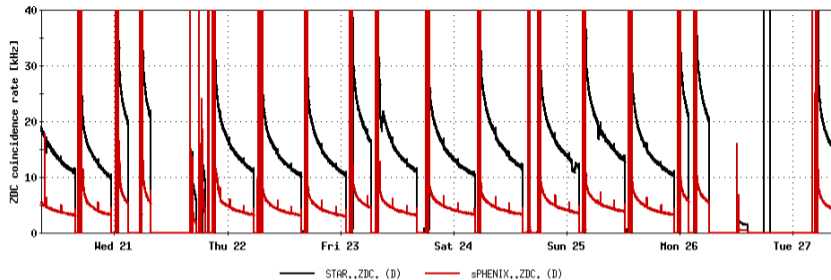


# RHIC Status

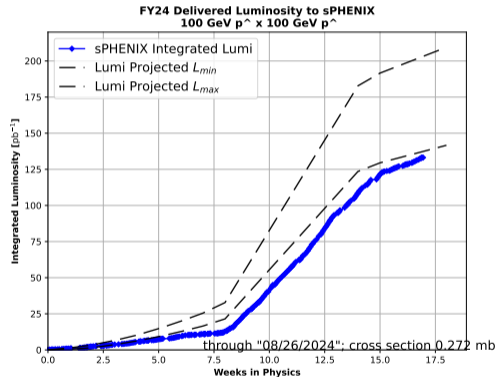
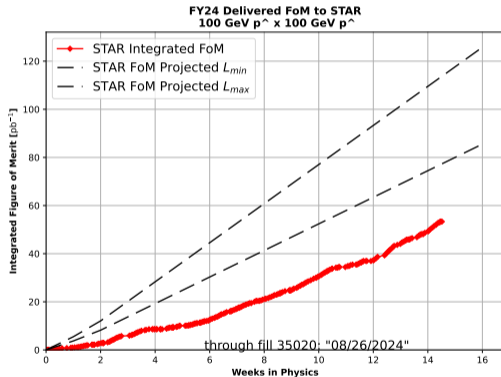
Kiel Hock

# Last Week at RHIC



# RHIC status and Lumi Projections

111x111 physics running since 4/30. Preliminary luminosity accounting



Inflection for sPHENIX projections coincides with change in crossing angle.

# RHIC Status

Physics running with up to  $2.3 \times 10^{11}$ /bunc at physics and 55% polarization.

AGS tunemeter back in service.

Updated logic for RHIC RF permit for Landau cavities to pull the permit in case the high level trips has been implemented and tested.

Saturating BPMs at IR8 DXs resulted in incorrect reporting of crossing angle. Resolved.

Sector 11 lead flows caused a beam abort at 0300. Thermistor board replaced.

Steam leak at LINAC resulted in only one APEX experiment being completed

B9-1 trips the result of being at the intensity limit. Need to develop a slower ramp or remain at current intensity

Smooth running through the weekend.

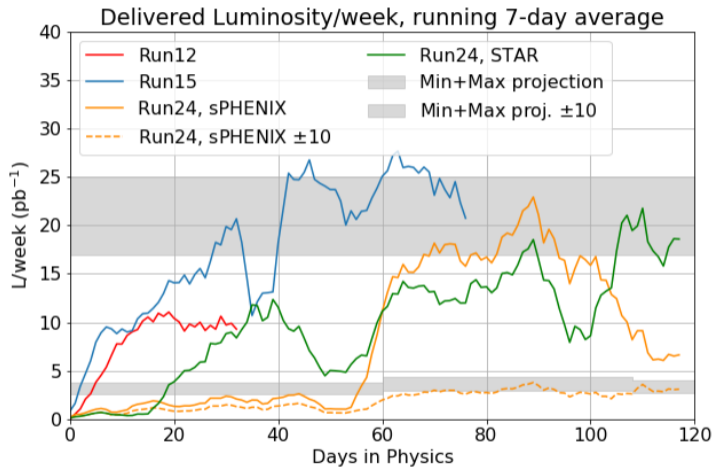
STAR magnet tripped several times

1c-ps1 CPCBPS permit failing.

- | Node card replaced x2

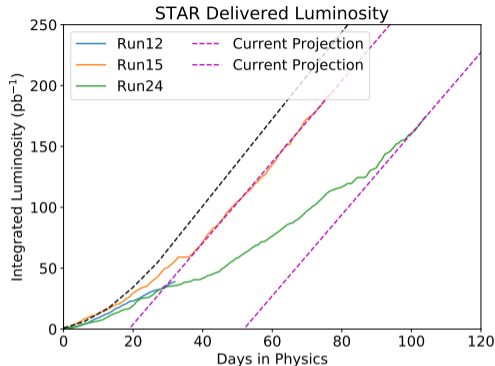
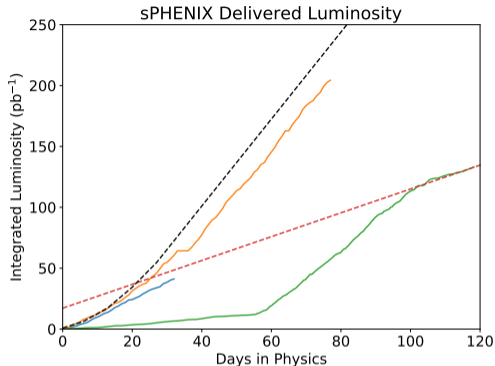
Severe weather and power dip 8/26. Recovered 8/27 @0500

# RHIC Performance



Both STAR and sPHENIX are within the minimum and maximum projected window.

# RHIC Performance II



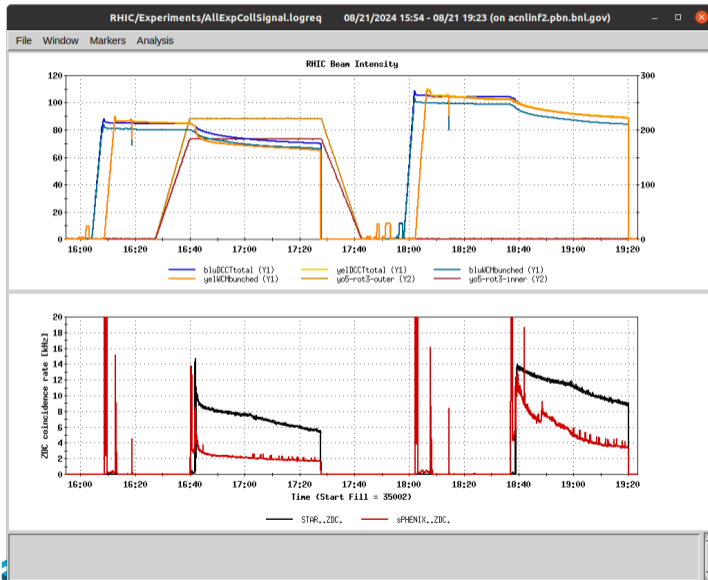
STAR projections currently on trend with Run15,  $23.3 \text{ pb}^{-1}/\text{week}$

sPHENIX projections are currently at  $6.9 \text{ pb}^{-1}/\text{week}$  which is  $3.5 \text{ pb}^{-1}/\text{week}$  within 10 cm

STAR  $L_{\text{max},\text{initial}} = 113.8 \cdot 10^{30} \text{ cm}^2/\text{s}$  from fill 34999,  $L_{\text{max},\text{initial},\text{run15}} = 113.9 \cdot 10^{30} \text{ cm}^2/\text{s}$

Calculations of stores at the time of the previous meeting found  $L_{\text{max}}$  to be within 10% of the best run15 stores, not 35% (when accounting for cross section differences and singles corrections).

# RHIC Performance III



APEX on Wednesday revealed significant performance differences when the rotators are on and off.

Large background induced ZDCs are sPHENIX as a result of different orbits.

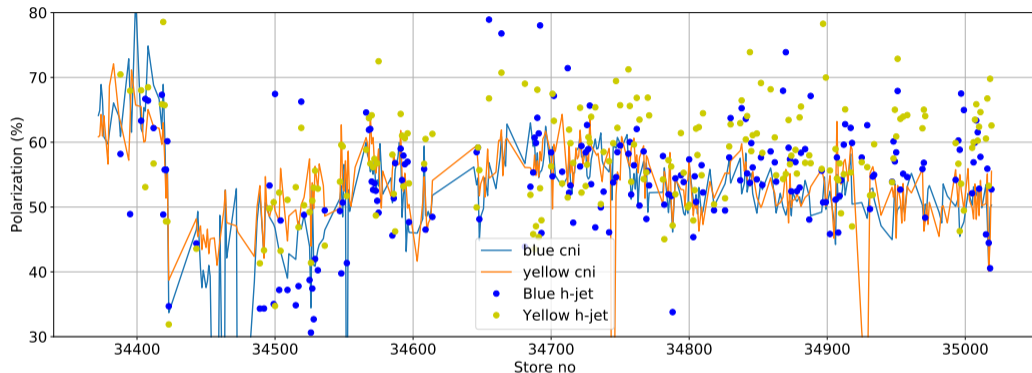
This would likely need further investigation and an MD to resolve. More on this later.

# RHIC Performance, current limitations

1. Currently at the intensity limit for B9-1, need slower ramp (MD time 1/2 shift to resolve)
2. Currently at loss limit for NM236
  - | has been an issue all run although has recently become much more persistent.
  - | MCR and specialists are working to resolve this.
  - | Instructions for MCR per procedure is to reduce intensity.
3. Currently at maximum intensity of  $2.7\text{-}2.8 \times 10^{11}$ /bunch from the injectors with current setup
  - | Due to aperture constraints and our current transverse emittances, reducing scraping in Booster does not lead to higher RHIC intensity.
  - | Switching to a different user may provide improvements that translate to intensity and polarization.
  - | So far there has been insufficient development time on these alternate users.
  - | Recent development delayed due to AGS tunemeter issues.
4. RHIC performance at store reduced by the rotator ramp.
  - | Could be worked into a longer MD, such as #1.



# Polarization Performance

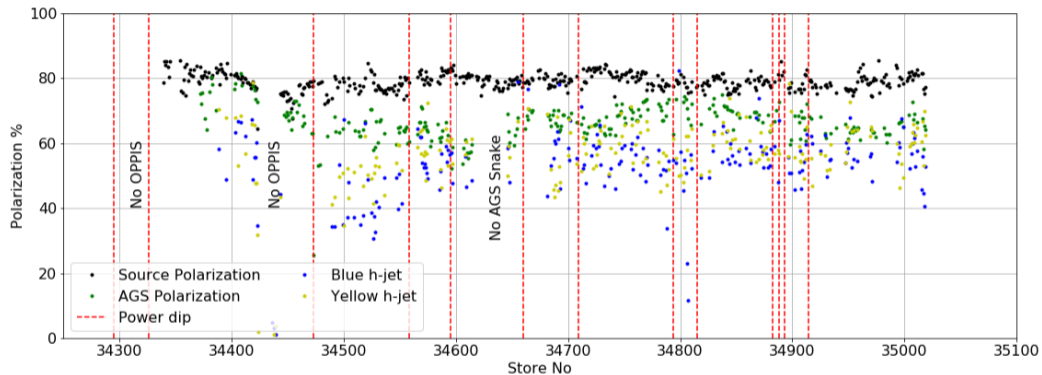


General down trend in polarization reported by CNI

Haixin investigated and found the CNI has not been calibrated since the start of run (historically has been done once every two weeks). It will be recalibrated during Wednesday's maintenance.

These calibrations are needed as the detectors degrade from radiation damage.

# Polarization Performance II



CNI	Full Run	Last 150	Last 14	h-jet	Full Run	Last 150	Last 14
blue	53.2	52.3	50.6	-	52.3	55.7	55.5
yellow	55.8	52.2	50.2	-	56.8	58.8	60.8

h-jet values from: <https://www.cnipol.bnl.gov/hjet/run24.html>

cni values from: <https://www.cnipol.bnl.gov/fills/?rp=24&fn=&ft=&be=100&mode=11&sb>Select>

# Au Startup Schedule, tentative

Day(s)	Objective
1	Maintenance followed by DX training + RF conditioning
2	RF conditioning overnight, injection setup during the day
3	ramp and store development, possibly more RF conditioning if we cannot hand
4	finish setup and hand store over for experimenter setup
5-8	ramp up and start setting up stochastic cooling 1 plane/store
7+	week of, look to setup 56 MHz

Start date tentatively 9/16.