

Week 1 (Mar 5-12):

- From 54 to 87 bunches ($1-1.1e11$)
- Reducing the collision vertex:
 - Ramping storage cavities to 440kV at the store (used in first part of the week)
 - Quad pumping technique: better longitudinal matching from AGS to RHIS.
- Nonlinear IR corrections
- Measurement of emittance and collision rate dependences
- Blue snake current adjustments to eliminate the beam depolarization.
- Improving Yellow transmission efficiencies on the ramp

Week 2 (Mar 13-19):

- From 87 to 110 bunches.
- Injector improvements:
 - Vertical scraping in Booster
 - Reduced cold snake in AGS
- Tightened longitudinal relative phase on the ramp
- Tightened transverse emittance control. Regular measurements: AGS IPM, ATR measurements, PolarScan, RHIC IPM
- Slow bunch intensity increase (to $1.1e11$ p/bunch at the injection)

Week 3 (Mar 20-26):

- Vernier scans: STAR and PHENIX beam collision sizes are the same.
- Slow bunch intensity increase (to more $1.3e11$ p/bunch at the injection)
 - Keeping injector emittances the same
 - Re-optimizing Yellow working point, when needed
- Improvement of longitudinal injection synchro.
- Yellow Snake current adjustments.

Week 4 (Mar 27-Apr 2):

- Getting luminosities and polarization to the level achieved a week before (after ~ 2.5 days without the beam operation).
- Second Vernier scans: STAR and PHENIX beam collision sizes are the same.
- Yellow total intensity limit at the injection: RF loops need adjustments.

Week 5 (Apr 3-9):

- Rotator reconfiguration: switching off STAR rotators.
- Improving synchro loop:
 - relative longitudinal phase stays constant on the ramp.
 - Yellow debunching problem eliminated
- Increased Yellow intensity at the store to the Blue intensity level (as result of the synchro loop improvements).
- Chromaticity corrections on the rotator part of the ramp based on Schottky measurements.

Week 6 (Apr 10-16): No development time.

Week 7 (Apr 17-23) (the weekend after one week shutdown):

- Blue working point switched to above the diagonal (to $Q_x < Q_y$ region).
Reduced coherent beam-beam effects.
- Blue store decoupling
- The golden AGS emittance set is different from what was before the shutdown.

Week 8 (Apr 24-30):

- Readjustment of the rotators for PHENIX (~1 shift)
from radial to longitudinal polarization orientation
It took 3 stores to get to exactly the same luminosity level as before.

Week 9 (May 1-7):

- With Blue working point above diagonal ($Q_x < Q_y$):
 - Fine tuning of Blue beam working point.
 - Blue bunch intensity increased to 1.5×10^{11} p/bunch at the injection;
Yellow bunch intensity limited to 1.4×10^{11} p/bunch (because of Blue lifetime at the store)
- Working point scans with and without beam-beam.
 $Q_x = 2/3$ resonance is dominating factor restricting tune space in both Blue and Yellow. Beam losses (and store lifetime) in both rings depends on distance from the resonance.
- New working point setup: Yellow above diagonal ($Q_x > Q_y$) and Blue below diagonal ($Q_x > Q_y$) has been used over weekend, providing more balance between Blue and Yellow lifetime.

Week 10 (May 8-14):

- Rotator reconfiguration. (took ~8h of beam time)
STAR rotator was switched on to provide longitudinal polarization. Present configuration:
 - STAR- longitudinal
 - PHENIX- longitudinal
- $2/3$ resonance correction found during APEX
was applied to the Yellow store store.
- Bunch intensity stepped up to 1.5×10^{11} p/bunch at the injection.
Problem: deteriorated Yellow ramp transmission

Week 11 (May 15-21):

- End of store BRAHMS collisions.
Luminosity lifetime spoiled.
- Improving $2/3$ resonance correction.
Applied in Yellow.
- One ramp and store with quad pumping (reduced luminosity)

- Successful test of turning on the rotators at the injection (as preparation for 31.2 GeV run).
- Problem: Yellow ramp transmission at high beam intensities

Week 12 (May 22-28):

- Yellow ramp efficiency improvements:
 - Readjustment of RF voltage ramp
 - Chromaticity corrections
- 1.55-1.6e11 p/bunch in Yellow can be used now as regular injected intensities
- After 6h: 3-collisions stores, with BRAHMS collisions added.

Week 13 (May 29- Jun 4): no developments

Week 14 (Jun 5 – Jun 11): [31.2 GeV run](#)

- Ramp development for 31.2 GeV.
- Getting acceptable lifetime at the store without rotators.
 - Low working points (<0.7) worked better than high working points (>0.72)
 - Fine working point tuning for the lifetime.
 - Reduced (close to 0 chromaticities) with the collisions on
 - 100kV/cavity RF voltage at the store
- Blue snake power supply readjustment (by 2A) to improve Blue polarization.
- Vernier scans in all experiments

Week 15 (Jun 12 – Jun 18):

- PHENIX rotators On.
- Improving lifetime at the store with rotators.
 - Fine working point tuning for the lifetime.
 - Optimal chromaticities (=1.5unit) : not too low (instabilities!), not to high (lifetime!)
- Vernier scans.
- Yellow Snake inner PS current increase (1A) and Yellow rotator orbit bump.
- Longitudinal separation improvements (during the switch to LinkHold mode).
- Bunch intensity increase (1. -> 1.2e11)