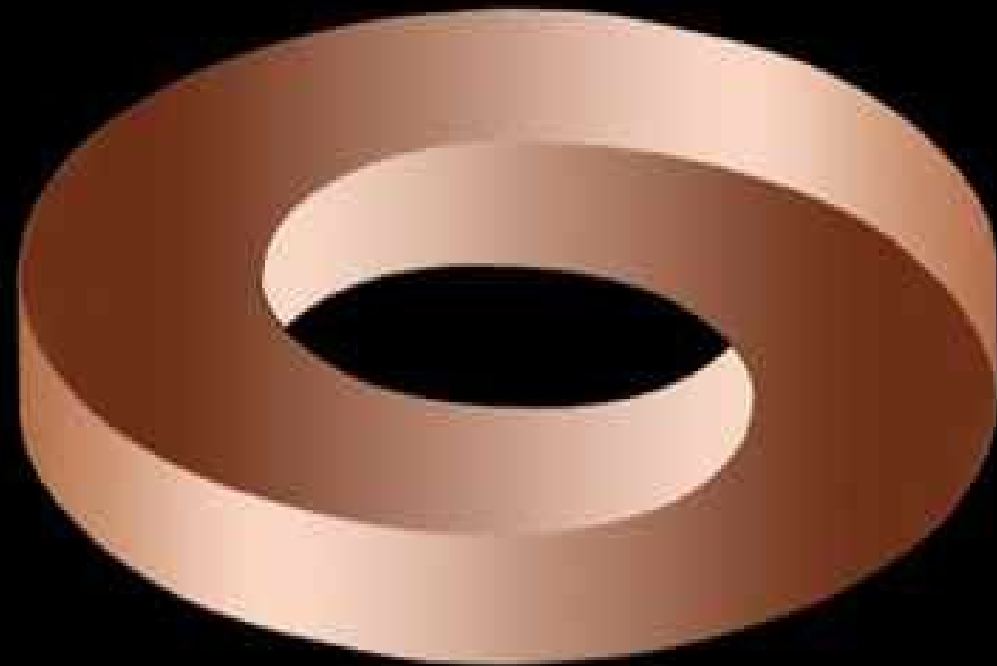


Run-5 Update



Machine-Experiments
February 16, 2005

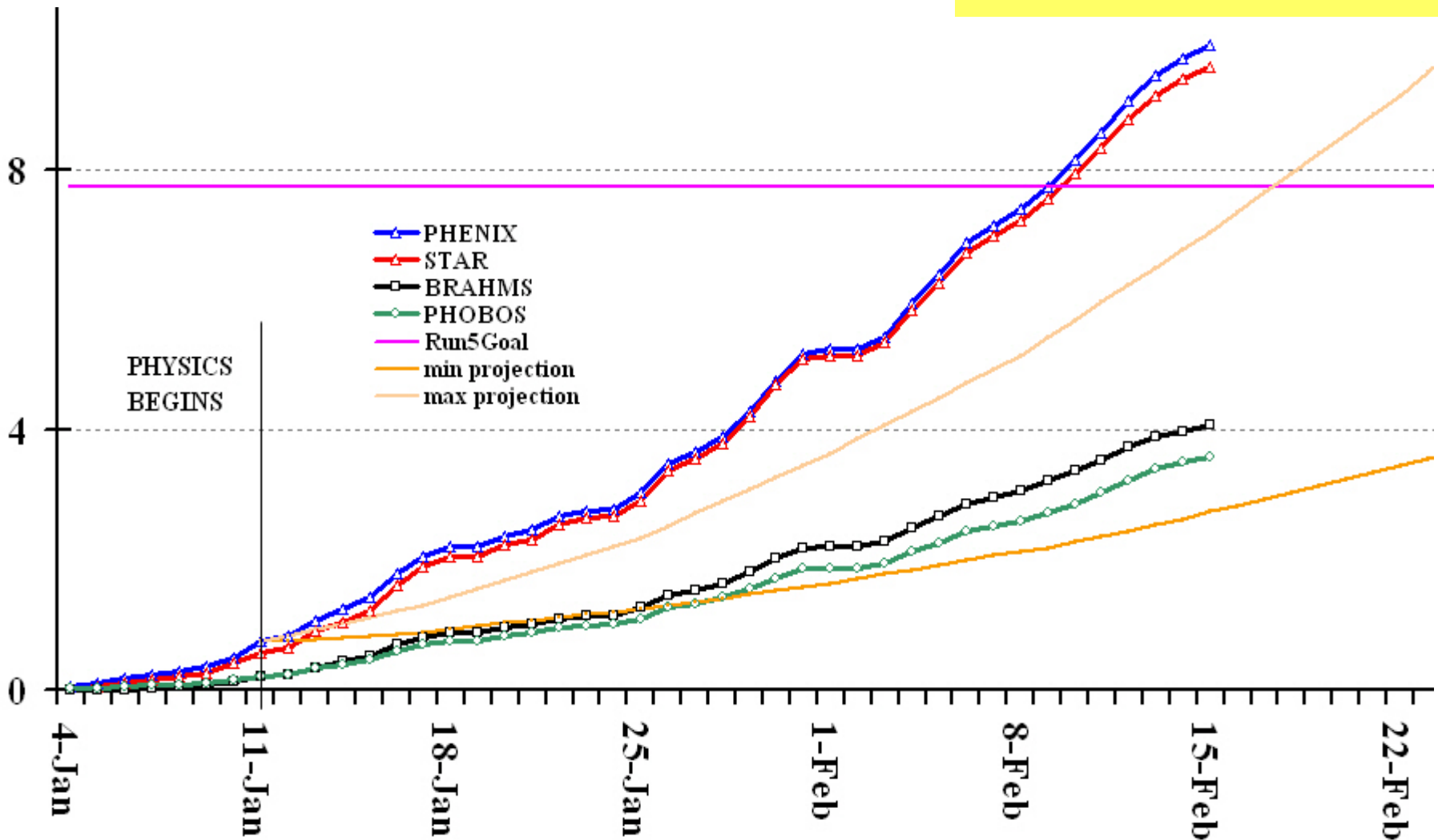




Status: 5 weeks

Total from January 11 (nbarn-1)

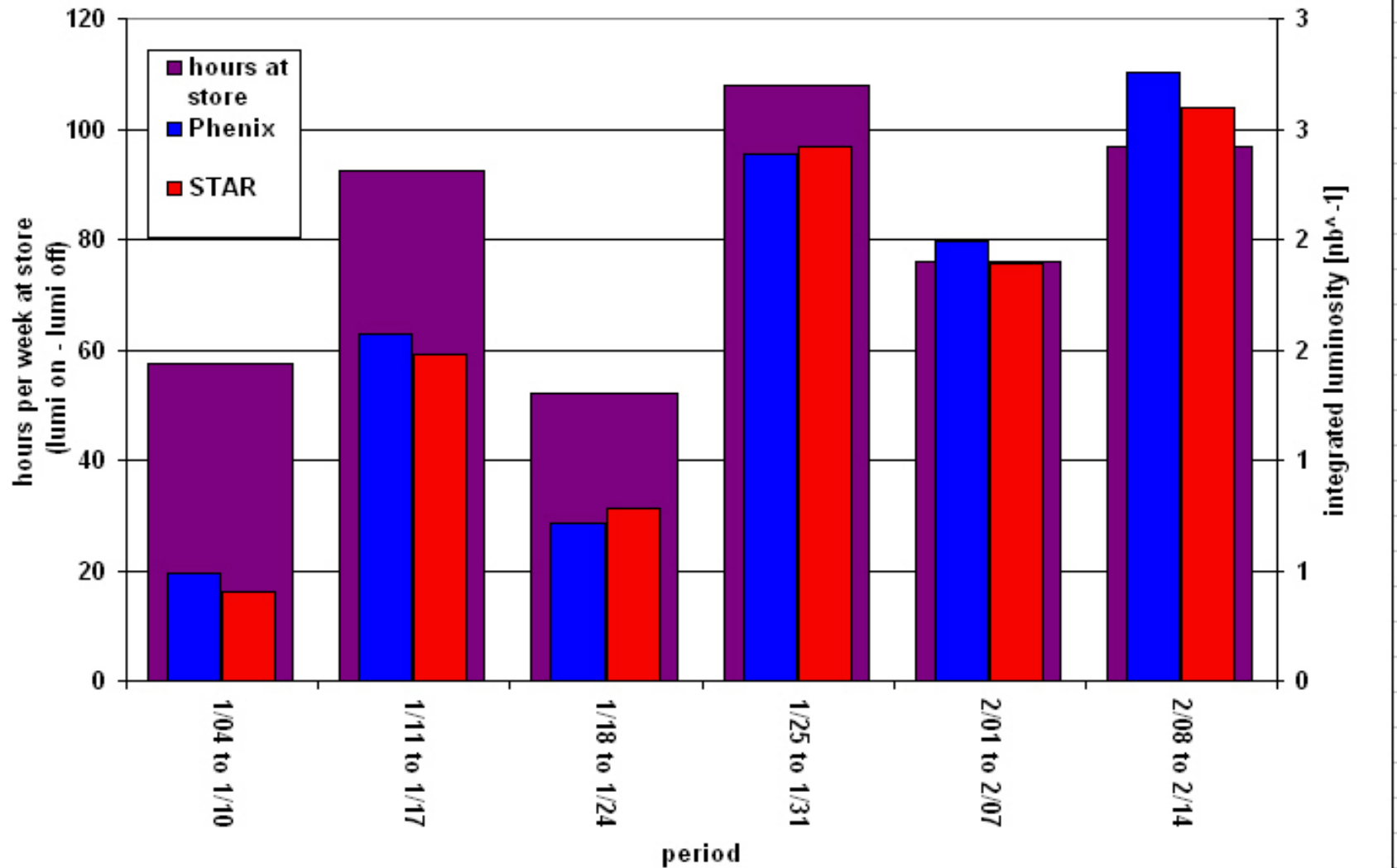
Phenix:	9.16
Star:	9.00
Brahms:	3.86
Phobos:	3.36





Luminosity / week

Run5 -- DELIVERED Integrated Luminosity by week



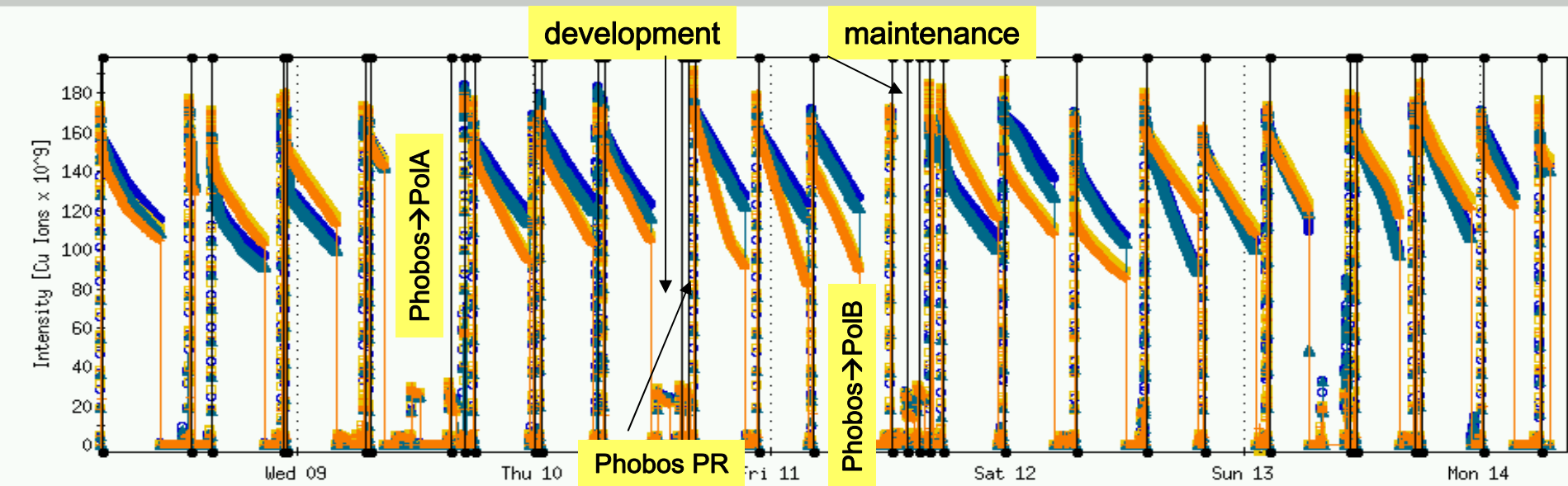
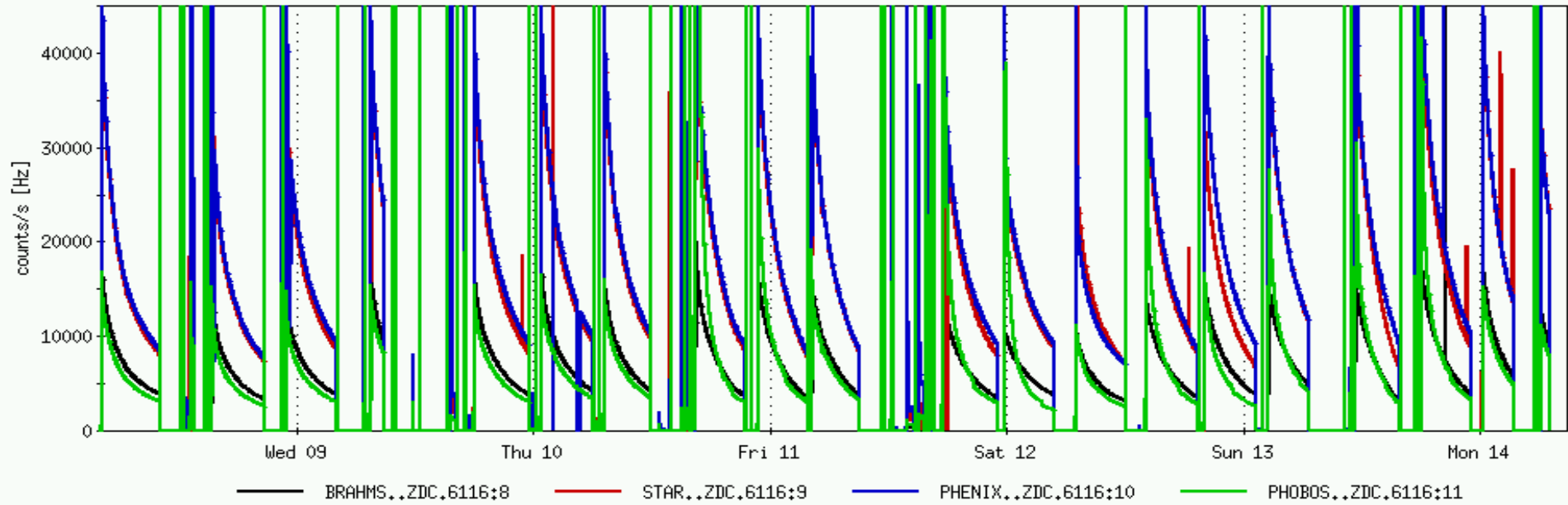


Week 5 - Highlights

- ❑ Phobos →A (Tuesday)
- ❑ **Machine development** (Thursday – 5 h):
 - solve blue loss at gammat4
 - chromaticity measurements
 - deal with loss yellow at snapback (dynamic tuning + yellow $Q_h \rightarrow 0.215$)
- ❑ **Phobos pressure rise onset** (Thursday)
- ❑ Phobos →B (Friday)
- ❑ **Machine maintenance necessary** (Friday – 2-3)
 - orbit at IR6, store (Vadim) → STAR background, TPC
- ❑ stochastic cooling development – BTF measurements (Mike Br+Bl)
- ❑ **Stable running over weekend**
- ❑ **Beam Ex (Monday)**-> decoupling on ramp yellow (Yun)
 - IR correction yellow (Fulvia, Vadim)



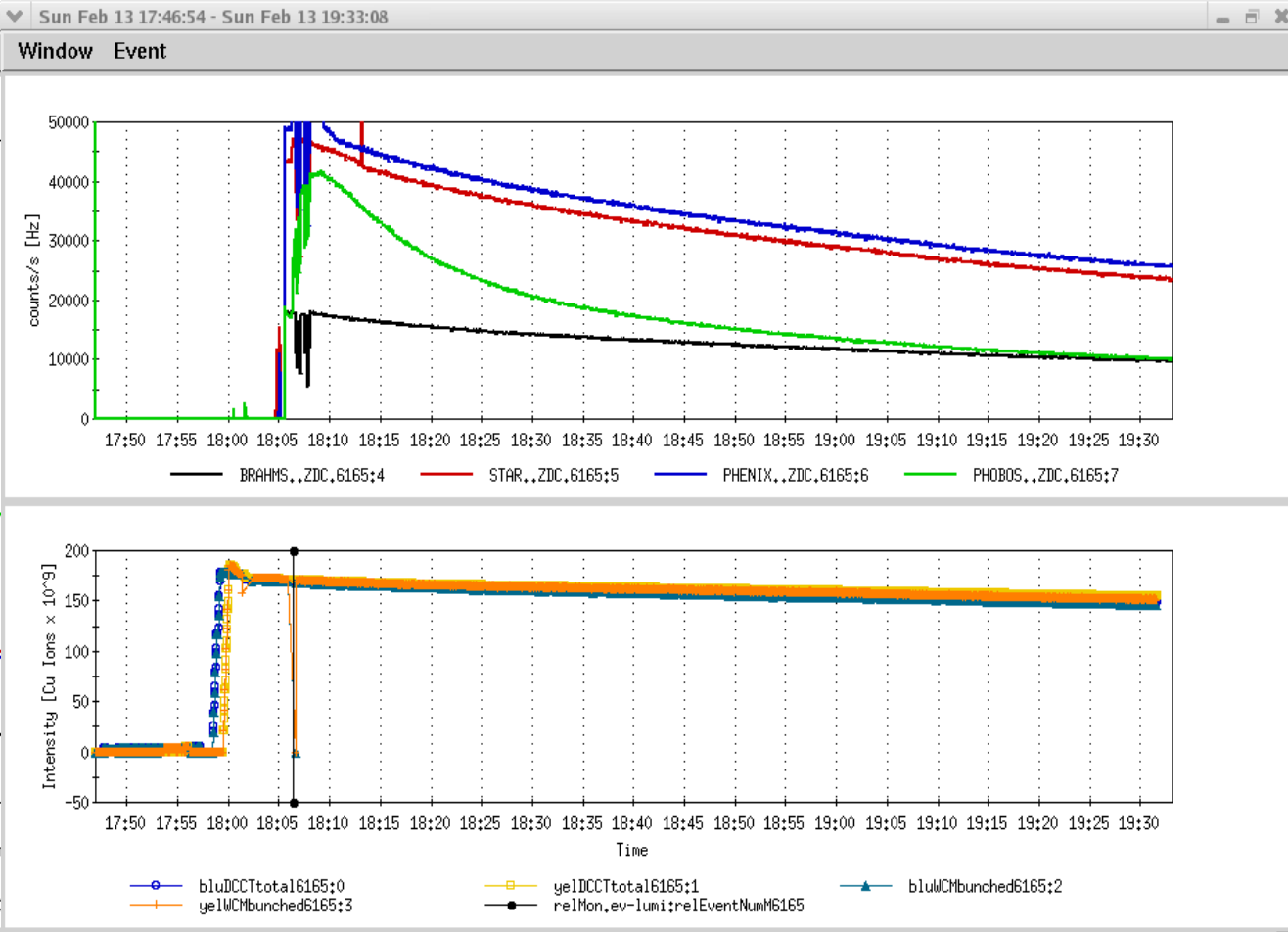
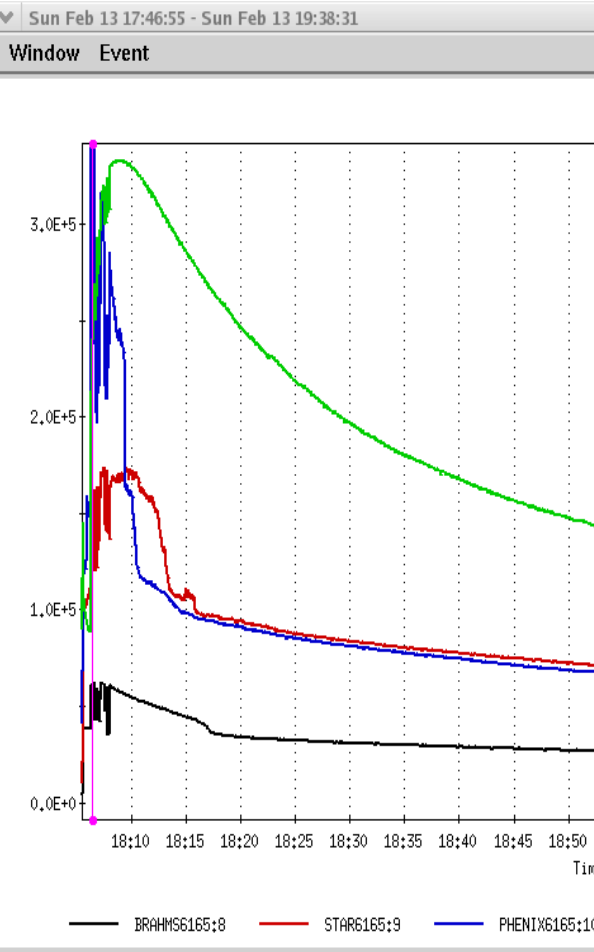
Intensity/collisions – Week 5





Store 6165 37x(4.8-5.0) – 96% 93%

No lifetime problems – Phenix initial ~50K
12 minutes ev-lumi to collimation done

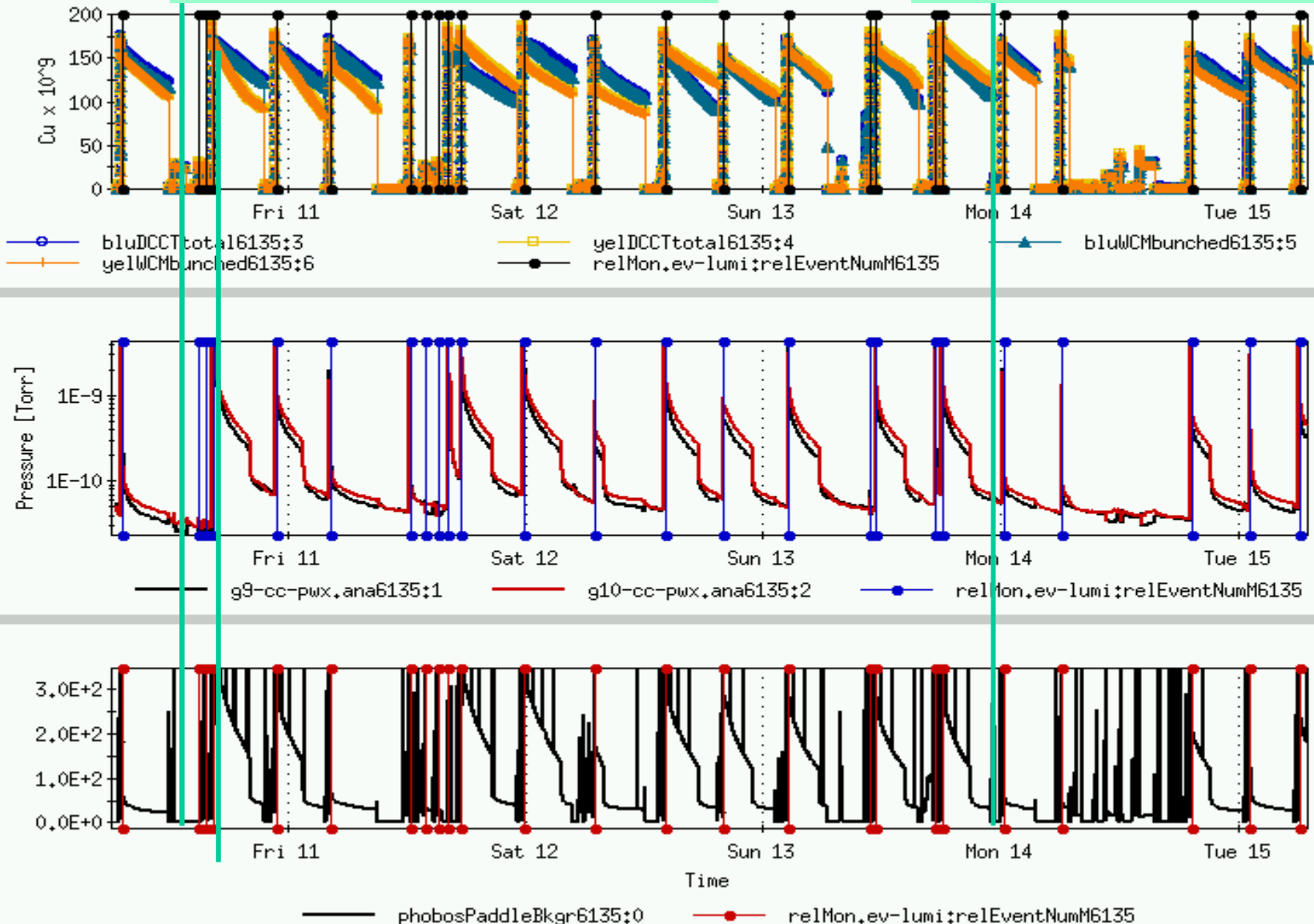




Phobos PR and background

Bunch intensity 37x 4.8-5.0 e9

Bunch intensity 37x 4.6-4.7 e9





Phobos operations – status

OBSERVATIONS

- ❑ Onset with 6139 – total intensity at store $170+e9$
- ❑ Almost all stores had it from 6139 (Thu eve) to 6165 (Sun eve)
- ❑ Takes 1-3 h to subside
- ❑ 34x34 did not make a difference
- ❑ Static pressure rise increase factor 2-3 prior to 6139
- ❑ Limiting intensity to **37x4.6** helps (5 ramps)

REMEDIES

- ❑ Sublimation (Vacuum group, maintenance)
- ❑ **Limit total intensity 37x4.6** luminosity impact:
4.5→4.8 at injection 4.5→4.2 at store initial rates:48K→42K
Limit to 37x4.6 *till Phobos achieves goal*, then increase to **37X(4.8 -5)e9**
test again 34x34 bunch pattern
- ❑ **28x28 6e9** → re-develop ramp (instabilities, ramp transmission)
time, impact on **reliability** (i.e. injectors)



Machine development week 6

- ❑ **Change Star, Phenix, Phobos magnet polarity**
(RHIC shifts back ON until job is done – estimate ~2 shifts)
- ❑ IR **BPM offsets** → orbit (*Todd, Vadim*)
- ❑ **Auto-orbit correction**
- ❑ Investigate loss at IP4 (real?)
- ❑ Commission **37x38 pattern** for stochastic cooling (*Wolfram*)
- ❑ **Orbit correction yellow** vertical at beta* stones (*Vadim*)
- ❑ **Coupling correction** yellow beta* stones (*Vadim, Yun, Fulvia*)
- ❑ **Vernier scans** at 4 experiments (*Angelika*)



3-way polarity switch

After ~2 shifts → 2 stores overnight

Transmission 93% 87% needs improvement (was 96% 92% before 'swotch')

Plan ~4 hours development after store tomorrow to improve efficiency – then hopefully straight physics running

