Run15 Status Update

RIKEN/RBRC
Itaru Nakagawa

Original Schedule

http://www.bnl.gov/cad/esfd

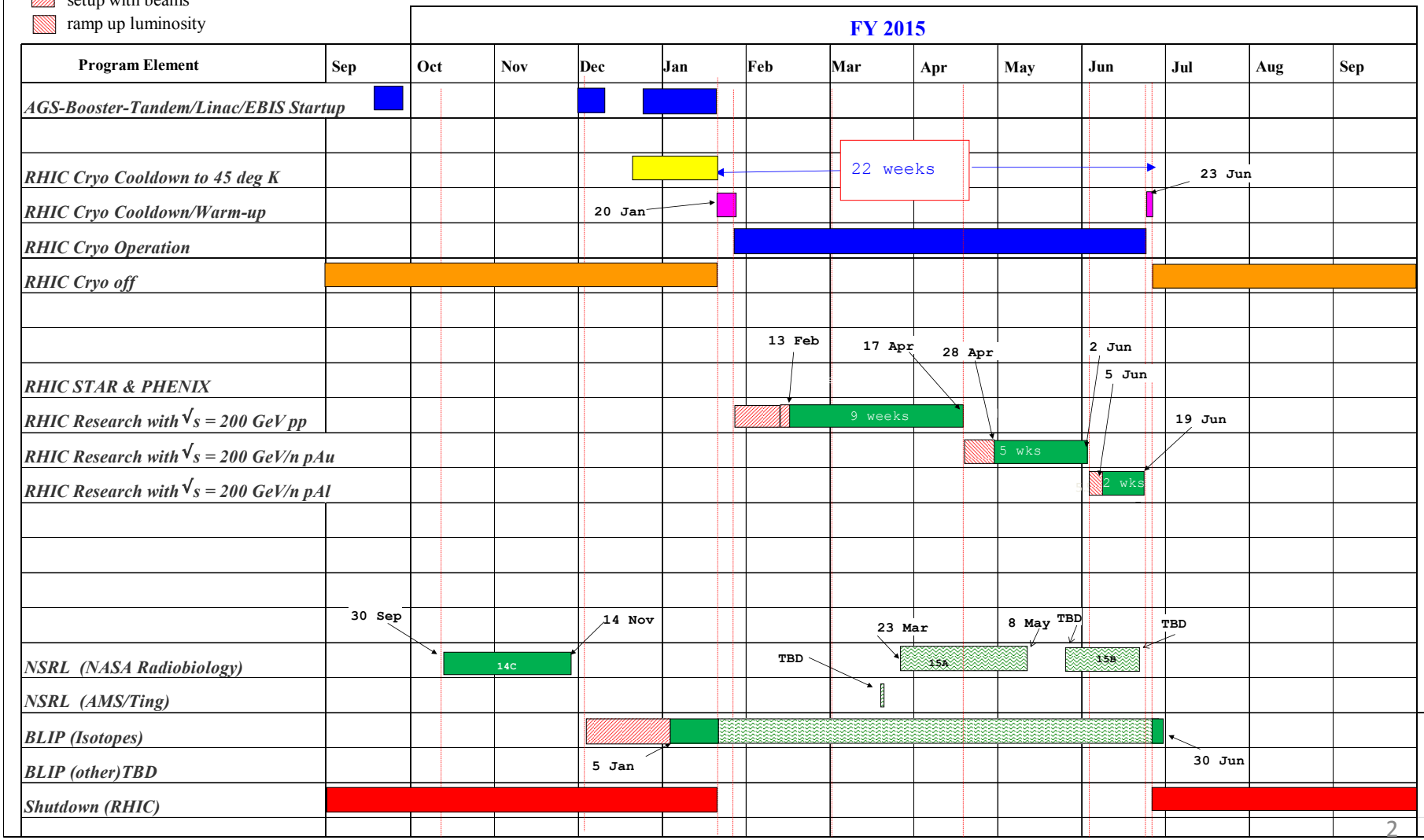
Scheduling Physicist: Makdisi/Pile

C-A Operations-FY15

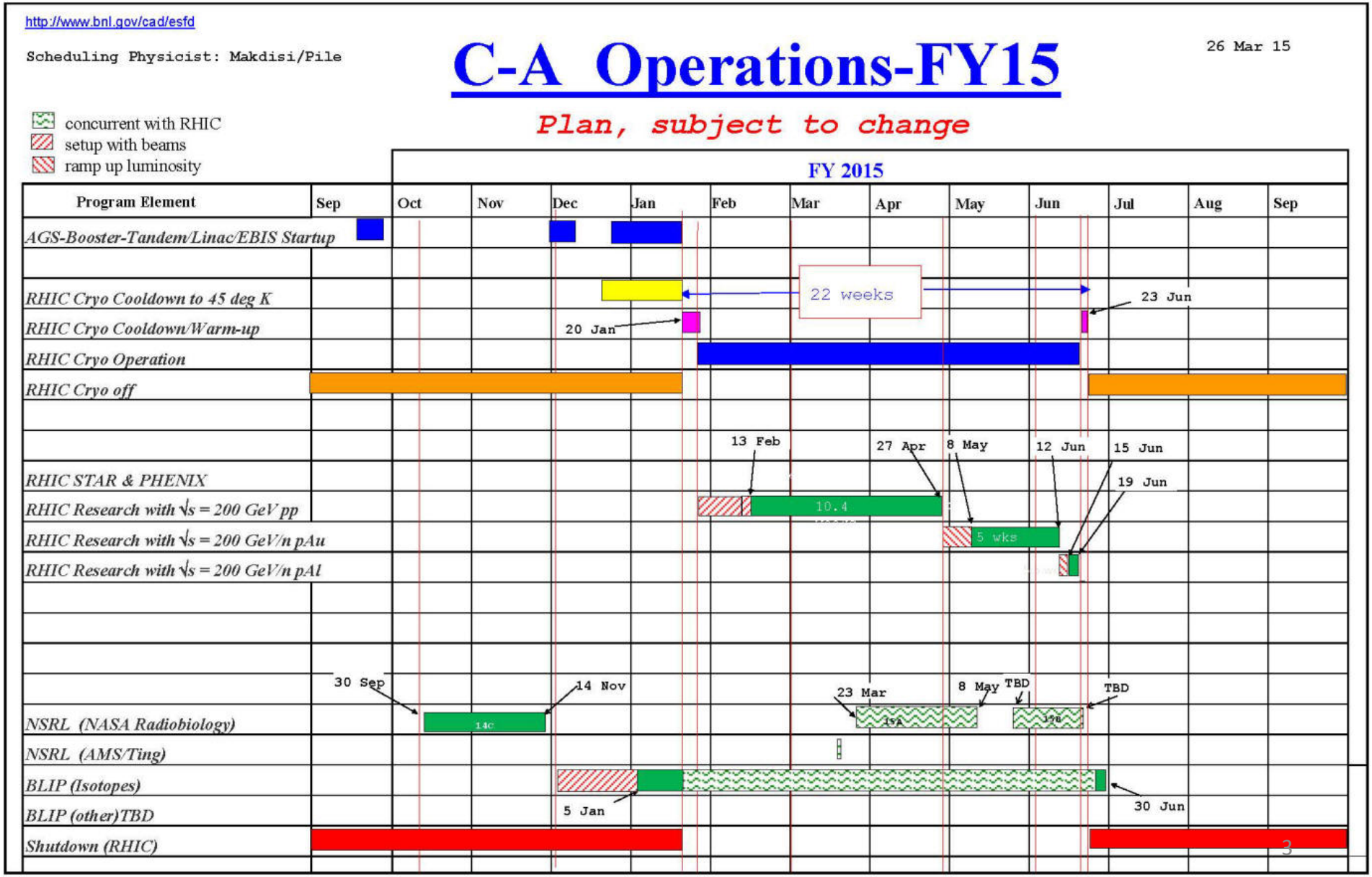
8 Jan 15

Plan, subject to change

concurrent with RHIC
setup with beams
ramp up luminosity



STAR requested 10 more days for pp in order to compensate longitudinal run, which was suffered from irrelevant rotator tune for the first 3 weeks of Run15.



Run 15 plan based on 22 weeks cryo operation
with 10 day extension of the 100 GeV pp run

- 20 Jan, Begin cool-down to 4.5K
- 21 Jan (morning), Blue cold
- 22 Jan (evening), Yellow cold
- 23 Jan (after midnight), Beam in Blue
- 7 Feb, First overnight stores for experiments
- 10 Feb (3 days early) store 18662, Begin 9 week **√s=200 GeV pp** physics run

- ***14-17 Mar, Power Dip downtime***

- ***today, 31 Mar…***

- 27 April (Mon), End 10.4 week √s=200 GeV pp physics run

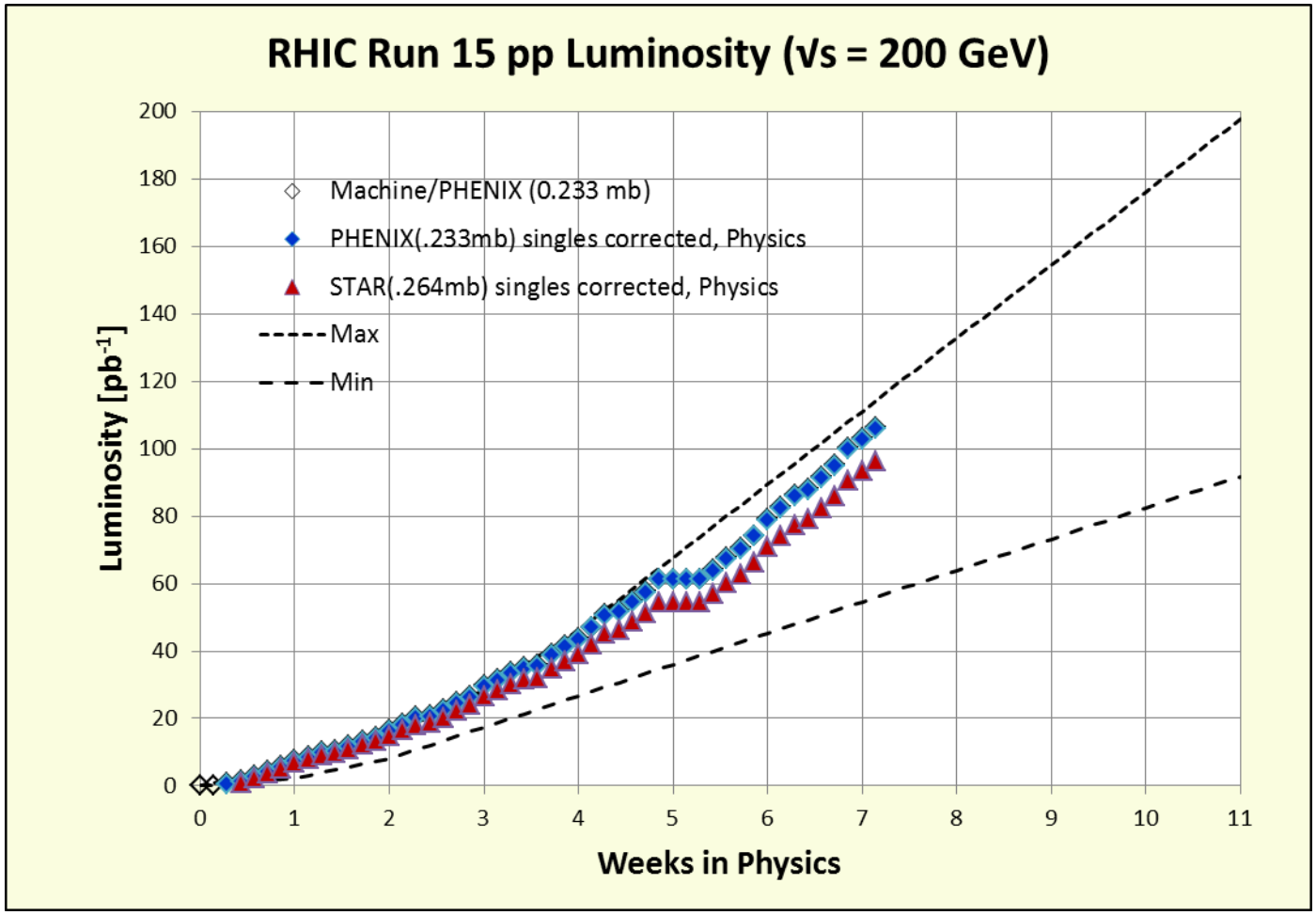
- 8 May (Fri), Begin 5 week **√s=200 GeV/n pAu** physics run
- 12 June (Fri), End 5 week √s=200 GeV/n pAu physics run

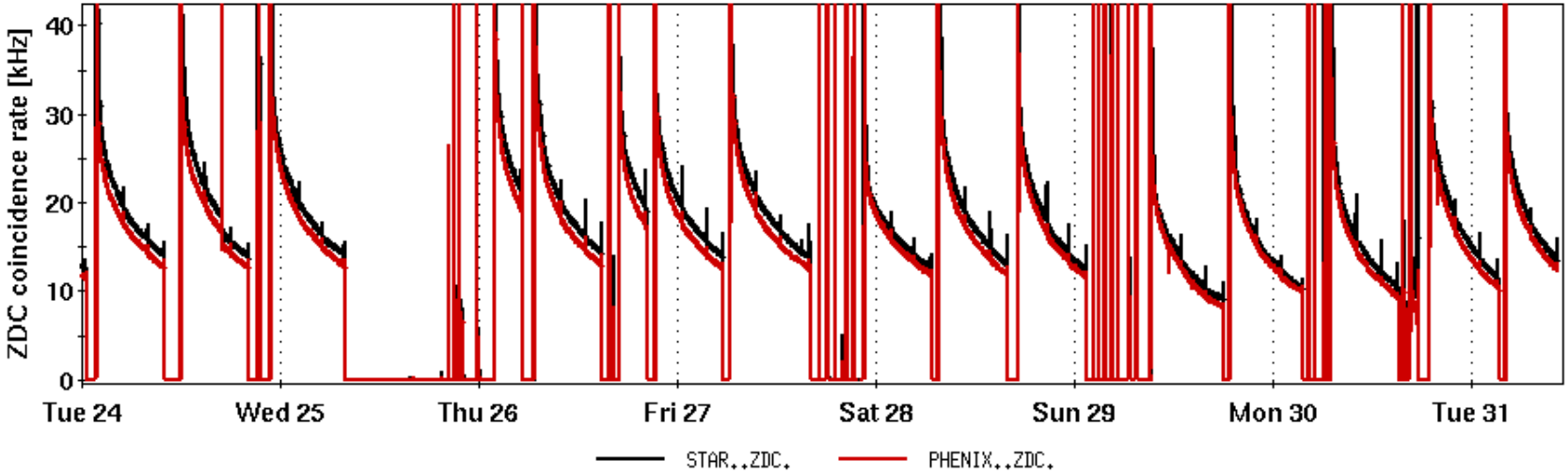
- 15 June (Mon), Begin 2 week **√s=200 GeV/n pAl** physics run
- 19 June (Mon), End **4 day (???)** √s=200 GeV/n pAl physics run

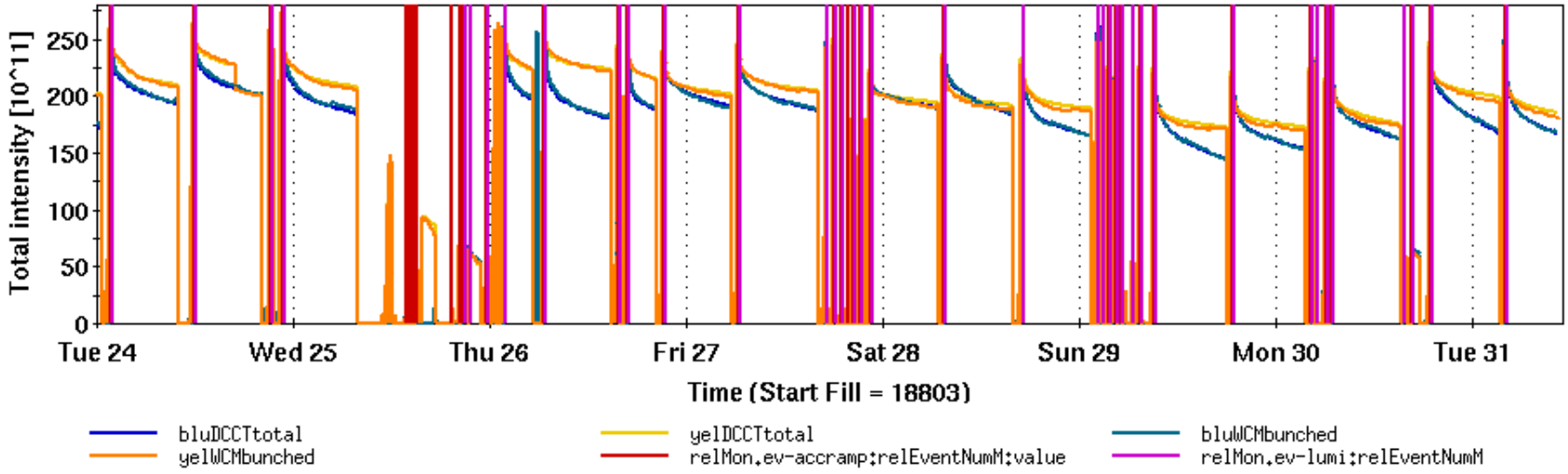
- 19 June (Fri), begin cryo warm-up
- 23 June, cryo warm-up complete, ***22.0 cryo weeks*** of operation

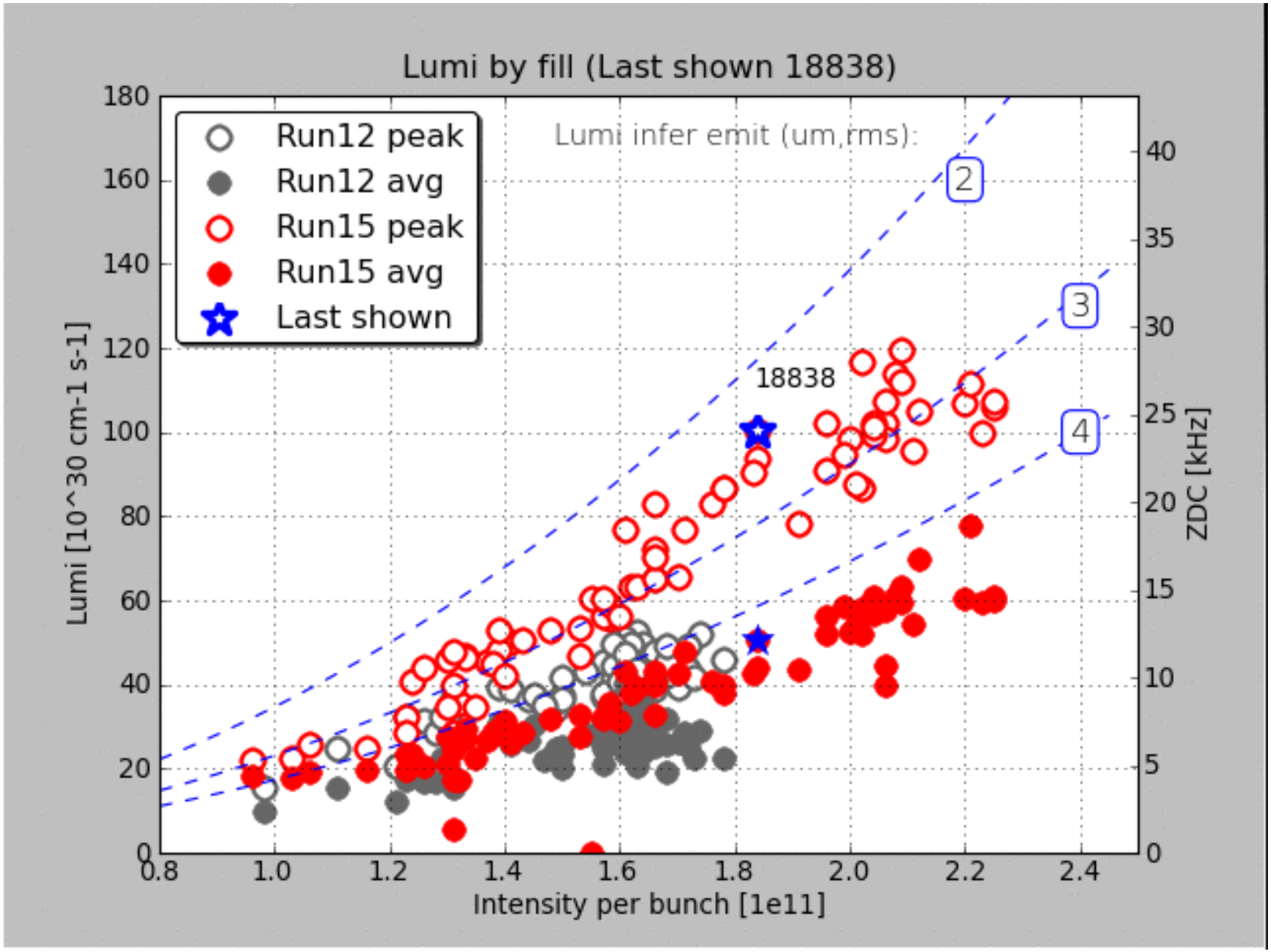
See http://www.rhichome.bnl.gov/AP/Spin2015/ for the Run Coordinator's detailed plan

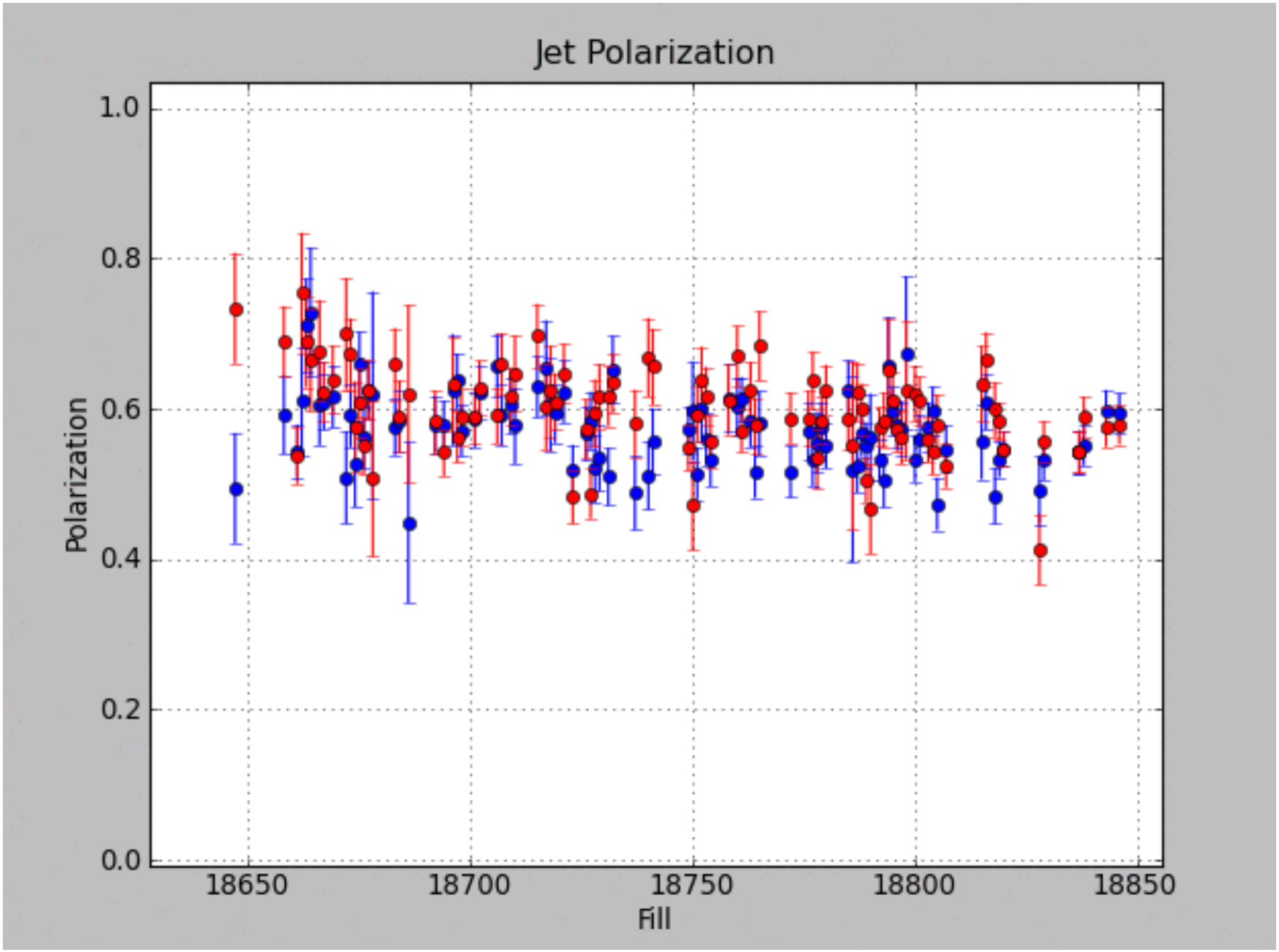
Thru fill 18846, 31 Mar – with updated cross sections

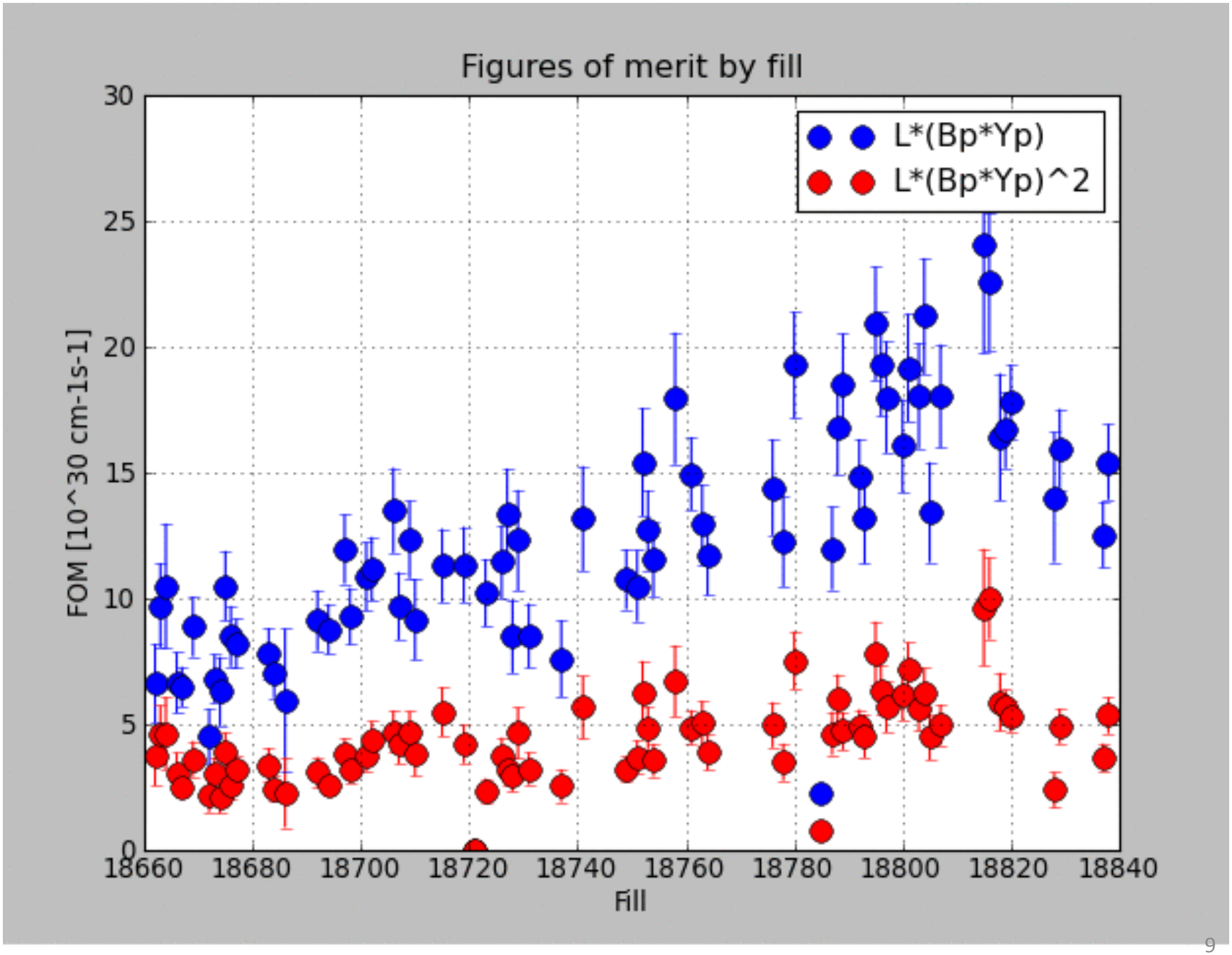



ZDC coincidence rate [kHz]
40
30
20
10
0
Tue 24
Wed 25
Thu 26
Fri 27
Sat 28
Sun 29
Mon 30
Tue 31
STAR..ZDC.
PHENIX..ZDC.


Total intensity [10^11]
250
200
150
100
50
0
Tue 24
Wed 25
Thu 26
Fri 27
Sat 28
Sun 29
Mon 30
Tue 31
Time (Start Fill = 18803)
bluDCCTtotal
yelWCMbunched
yelDCCTtotal
relMon.ev-accramp:relEventNumM:value
bluWCMbunched
relMon.ev-lumi:relEventNumM

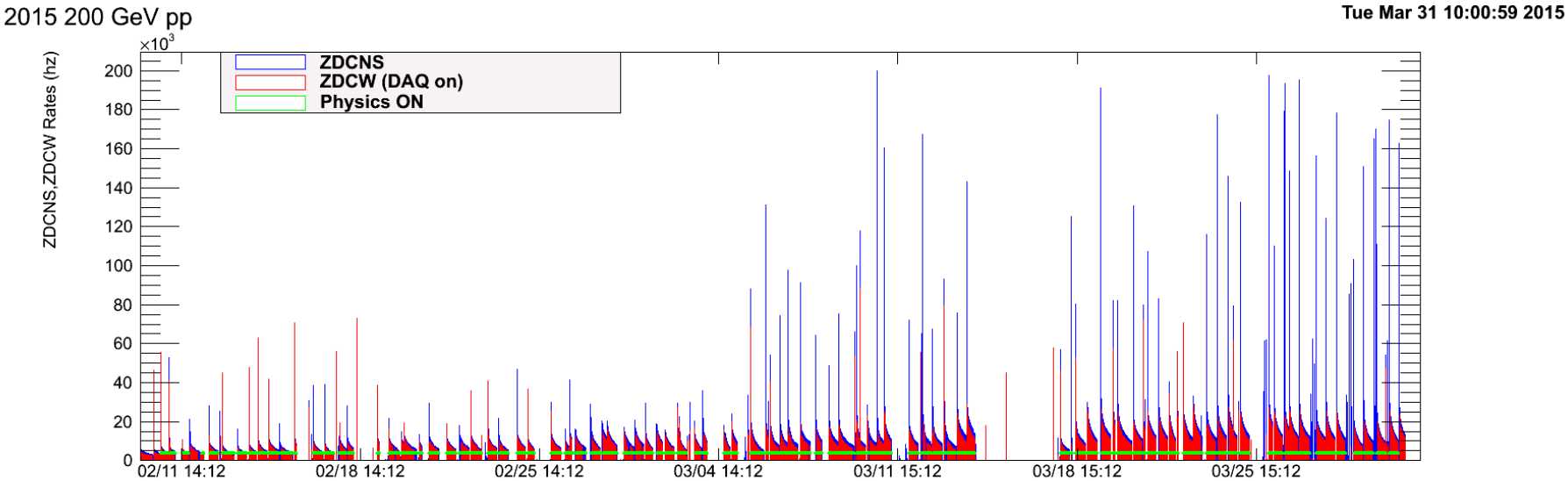

Lumi by fill (Last shown 18838)
Run12 peak
Run12 avg
Run15 peak
Run15 avg
Last shown
Lumi infer emit (um,rms):
2
3
4
18838
Lumi [10^30 cm-1 s-1]
ZDC [kHz]
Intensity per bunch [1e11]
0
20
40
60
80
100
120
140
160
180
0
5
10
15
20
25
30
35
40
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4

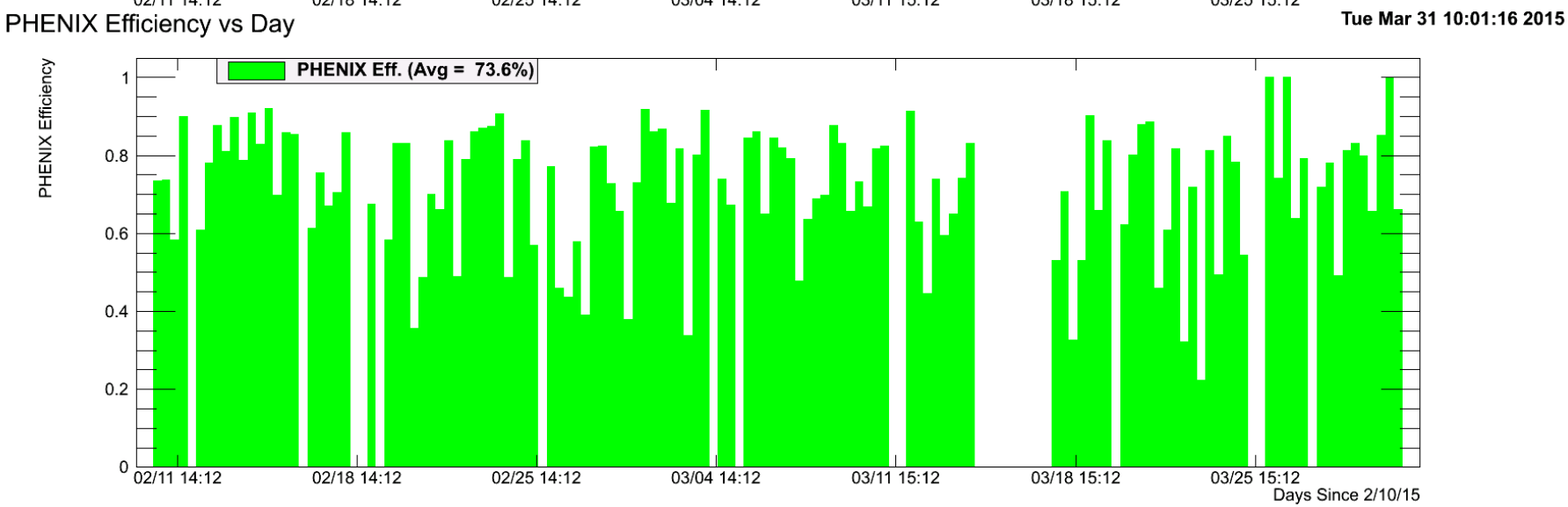

Jet Polarization
Polarization
Fill
1.0
0.8
0.6
0.4
0.2
0.0
18650
18700
18750
18800
18850


Figures of merit by fill
L*(Bp*Yp)
L*(Bp*Yp)^2
FOM [10^30 cm-1s-1]
Fill
0
5
10
15
20
25
30
18660
18680
18700
18720
18740
18760
18780
18800
18820
18840

PHENIX

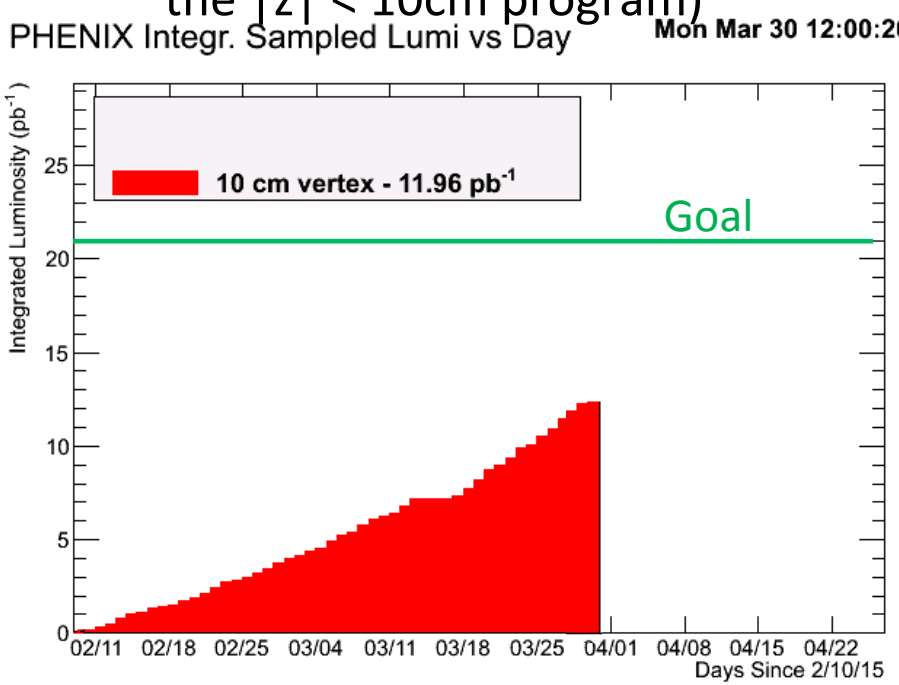
PHENIX Efficiency

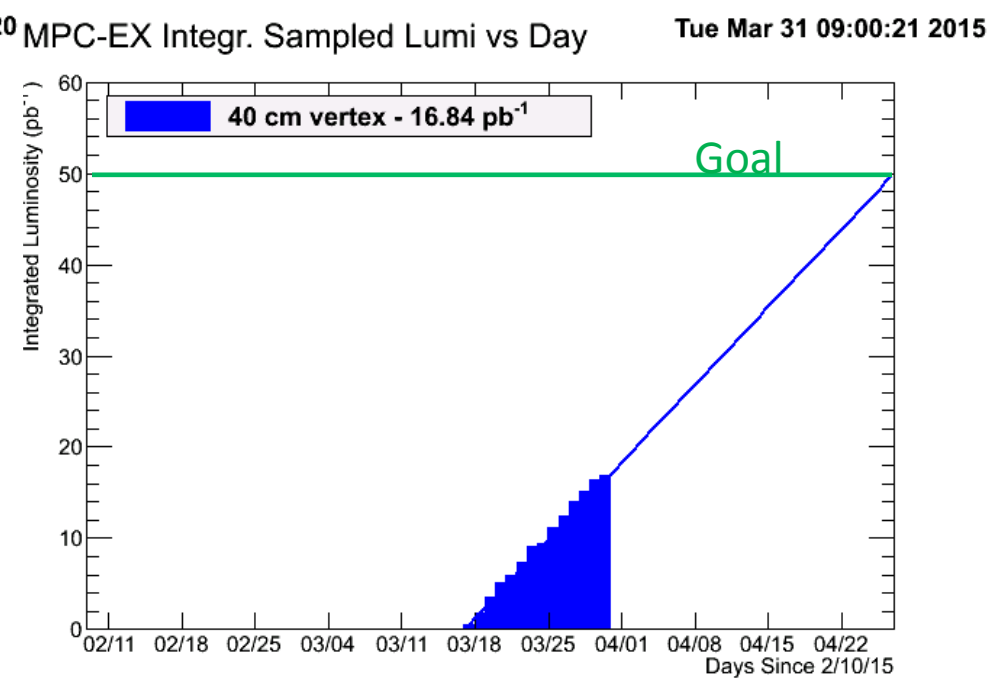




Luminosity Progress

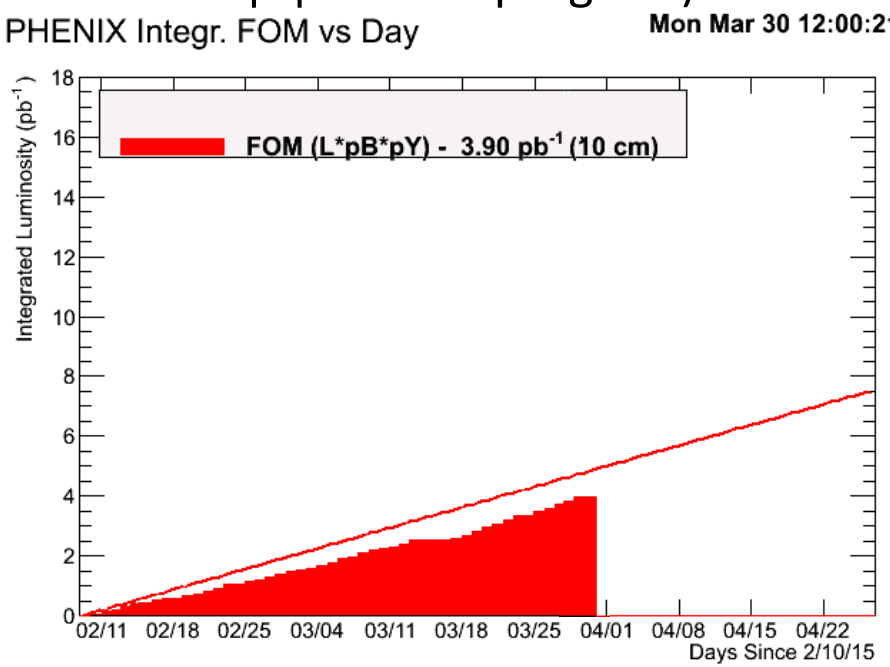
- RHIC projections (http://www.rhichome.bnl.gov/RHIC/Runs/RhicProjections.pdf) gave Run-12 achieved delivered luminosity as ***9.3 pb^{-1}/week*** and ***22 pb^{-1}/week*** max expected in Run-15 (after 5 weeks running).
- Converting to our recorded luminosity: ***4.5 pb^{-1}/week*** and ***10.1 pb^{-1}/week*** (for the |z| < 40cm program) and ***1.6 pb^{-1}/week*** and ***3.85 pb^{-1}/week*** (for the |z| < 10cm program)

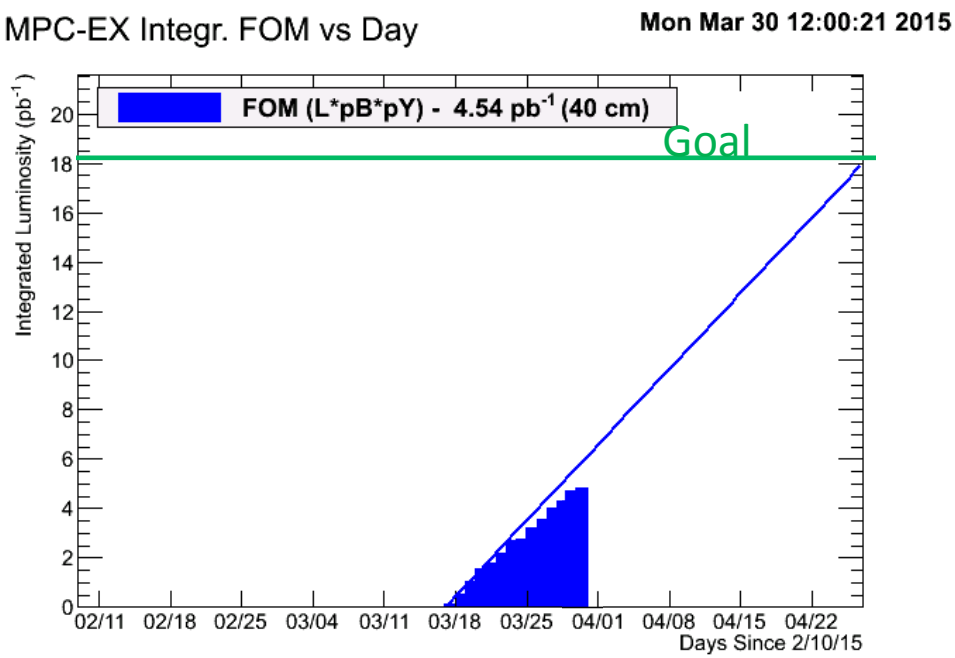




FOM Progress

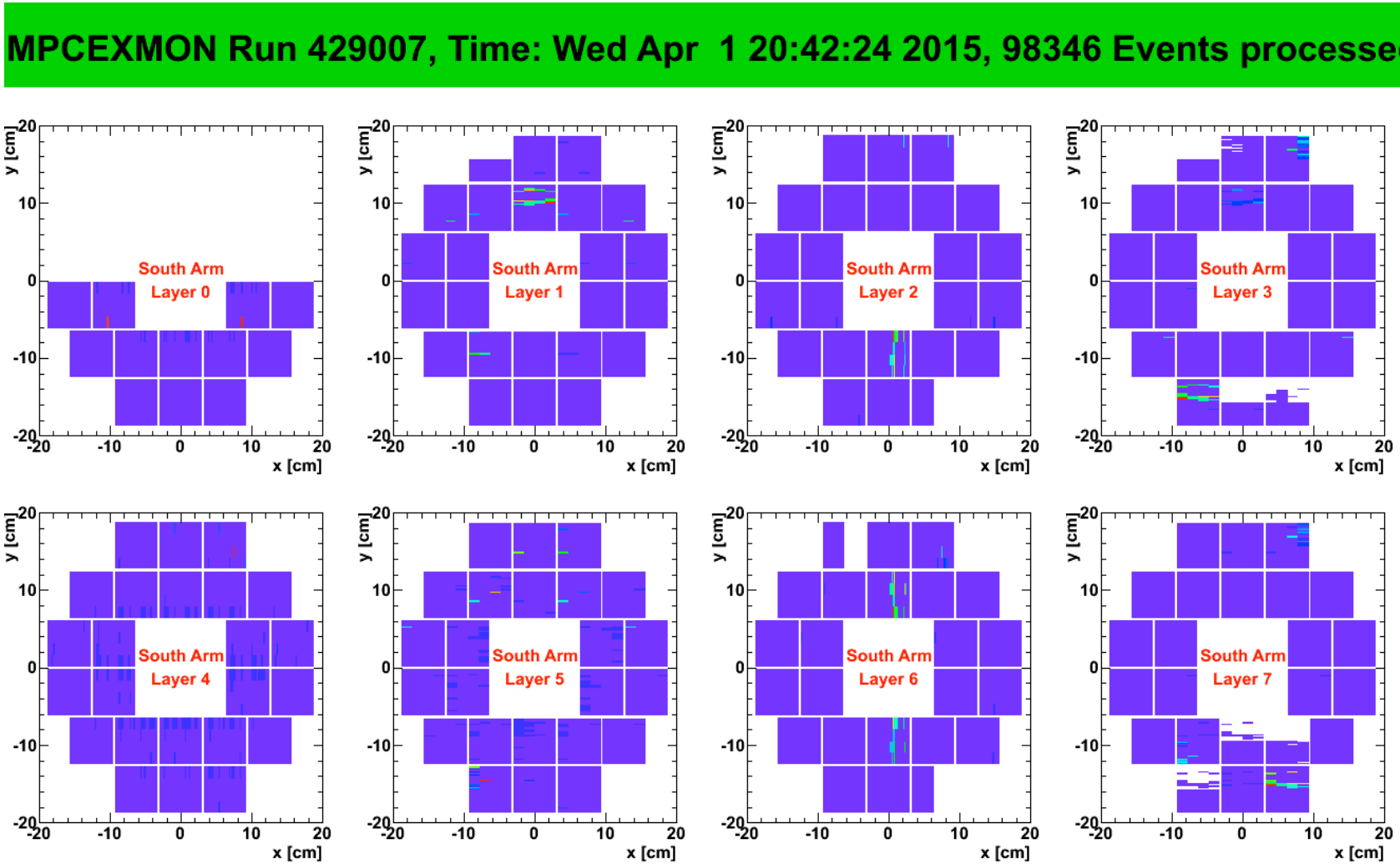
- RHIC projections (http://www.rhichome.bnl.gov/RHIC/Runs/RhicProjections.pdf) gave Run-12 achieved delivered luminosity as ***9.3 pb^{-1}/week*** and ***22 pb^{-1}/week*** max expected in Run-15 (after 5 weeks running).
- Converting to our recorded luminosity: ***4.5 pb^{-1}/week*** and ***10.1 pb^{-1}/week*** (for the |z| < 40cm program) and ***1.6 pb^{-1}/week*** and ***3.85 pb^{-1}/week*** (for the |z| < 10cm program)



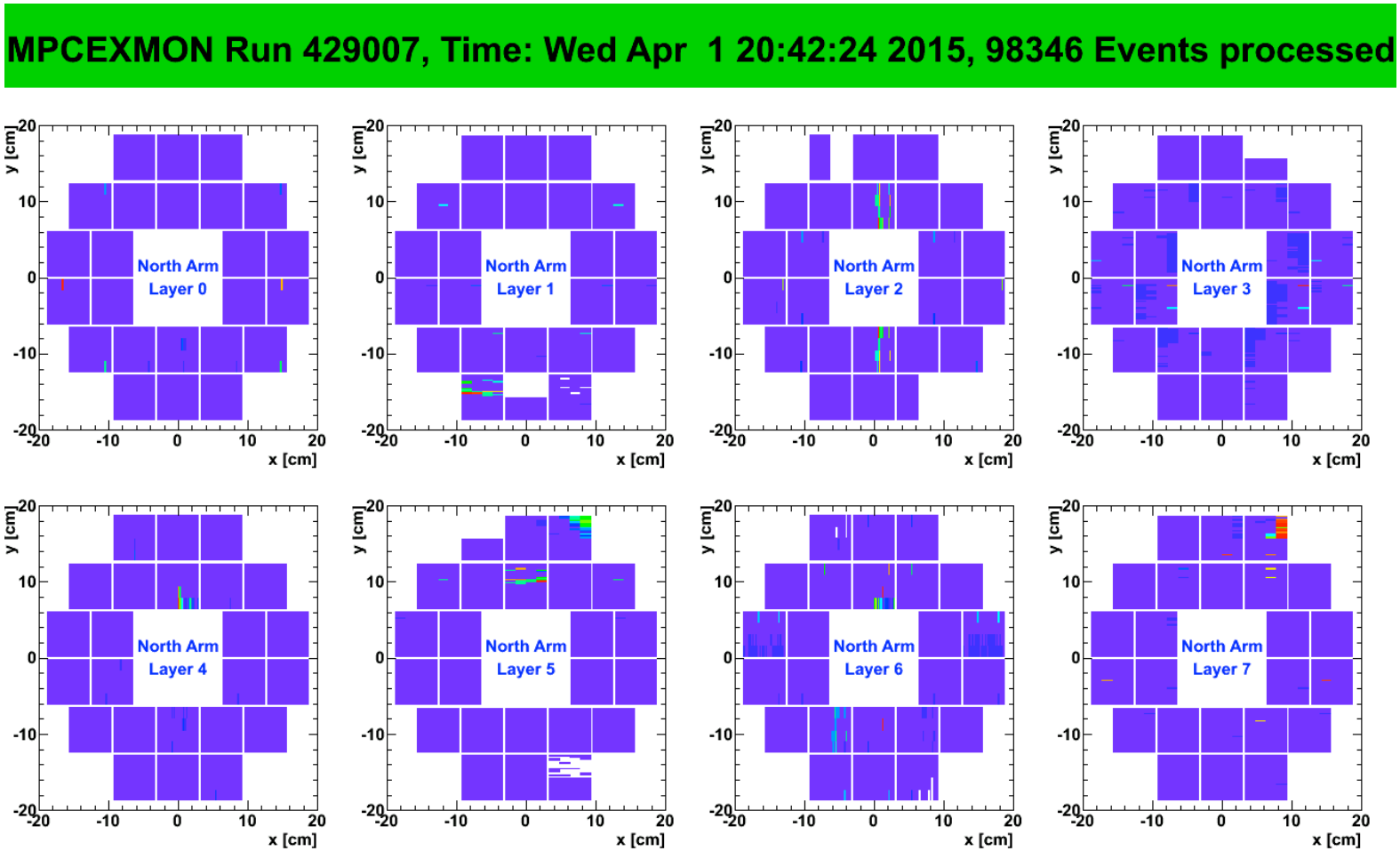


MPC-EX

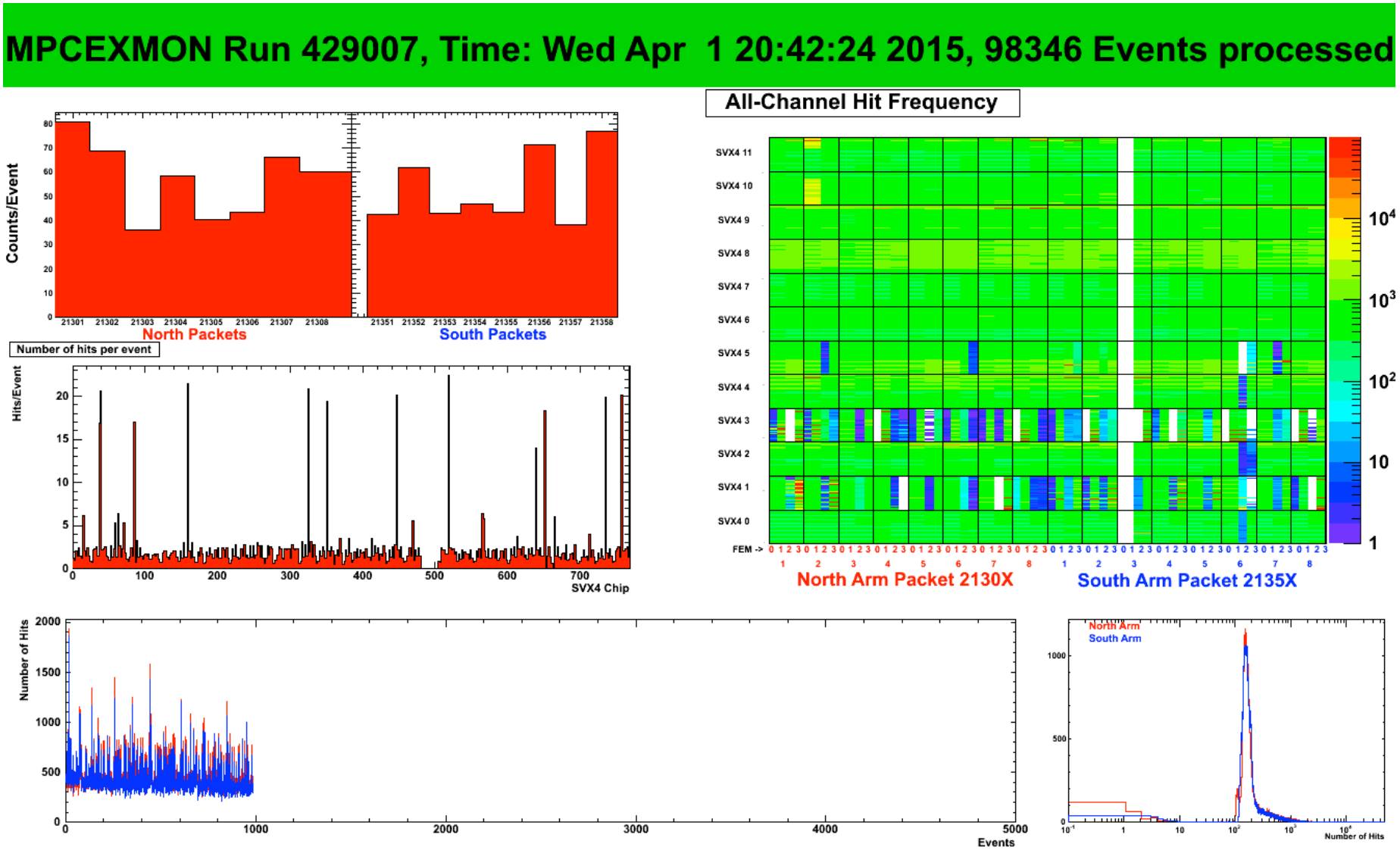
South MPC-Ex Acceptance



North MPC-Ex Acceptance

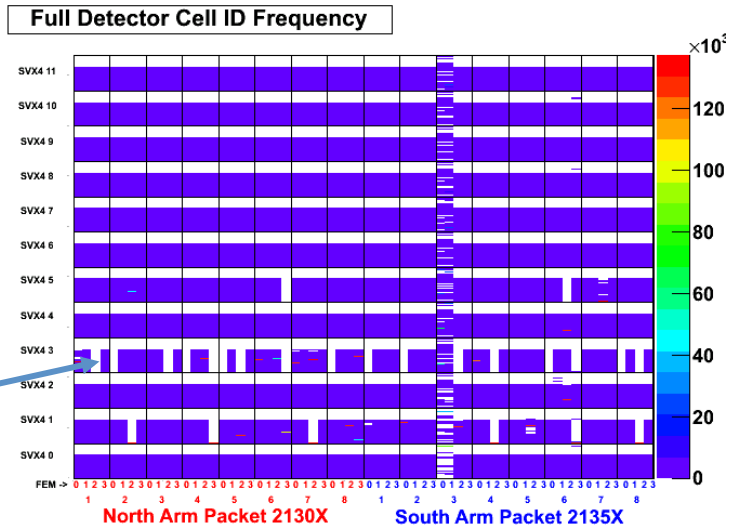


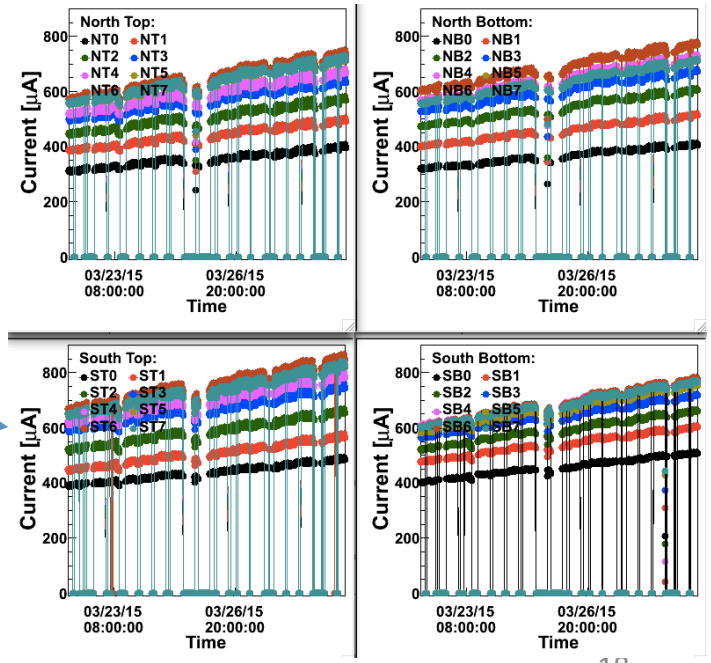
Online Monitor



MPCEX update

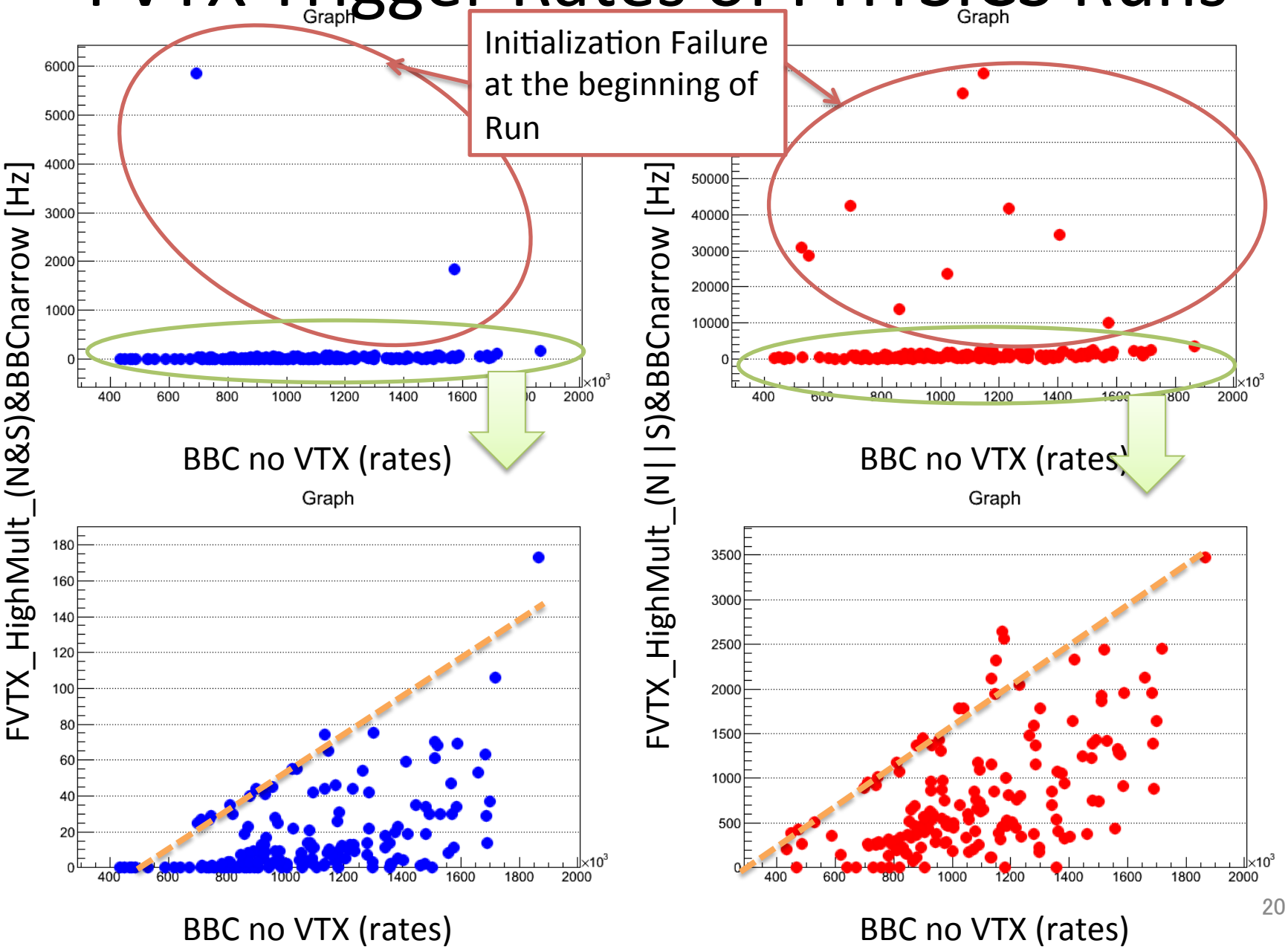
- Both MPC-EX N,S running in PHENIX DAQ since 3/17
- Final timing adjustments completed 3/26
- Continuing work on:
  - SVX4 Cell ID errors (~7% of N/S, overlapping)
- Offline analysis, matching with MPC underway
  - Working on geometry, matching, energy scale, pizeroes…
- Possible issue with currents growing to exceed MPOD limit, esp. in back layers. Working on a solution.



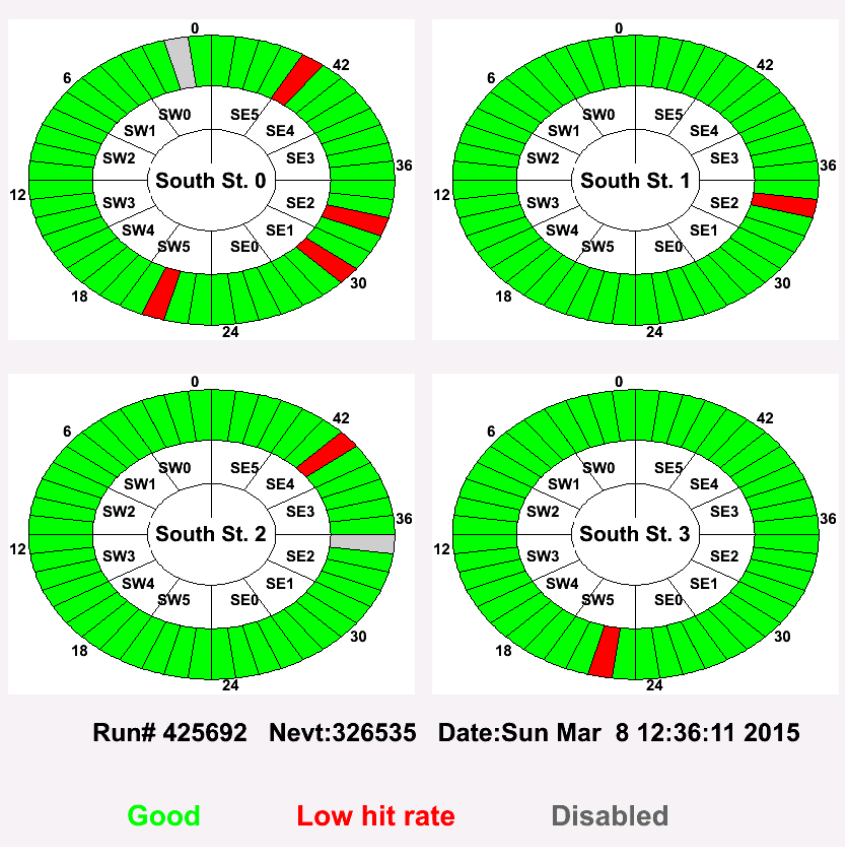


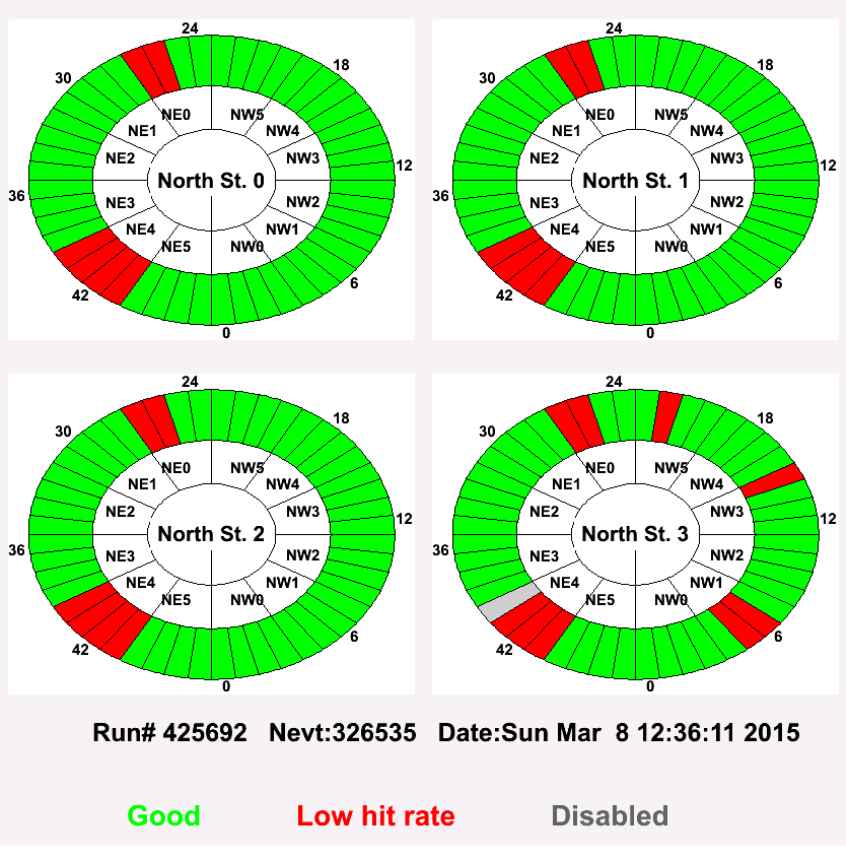
FVTX TRIGGER

FVTX Trigger Rates of PHYSICS Runs

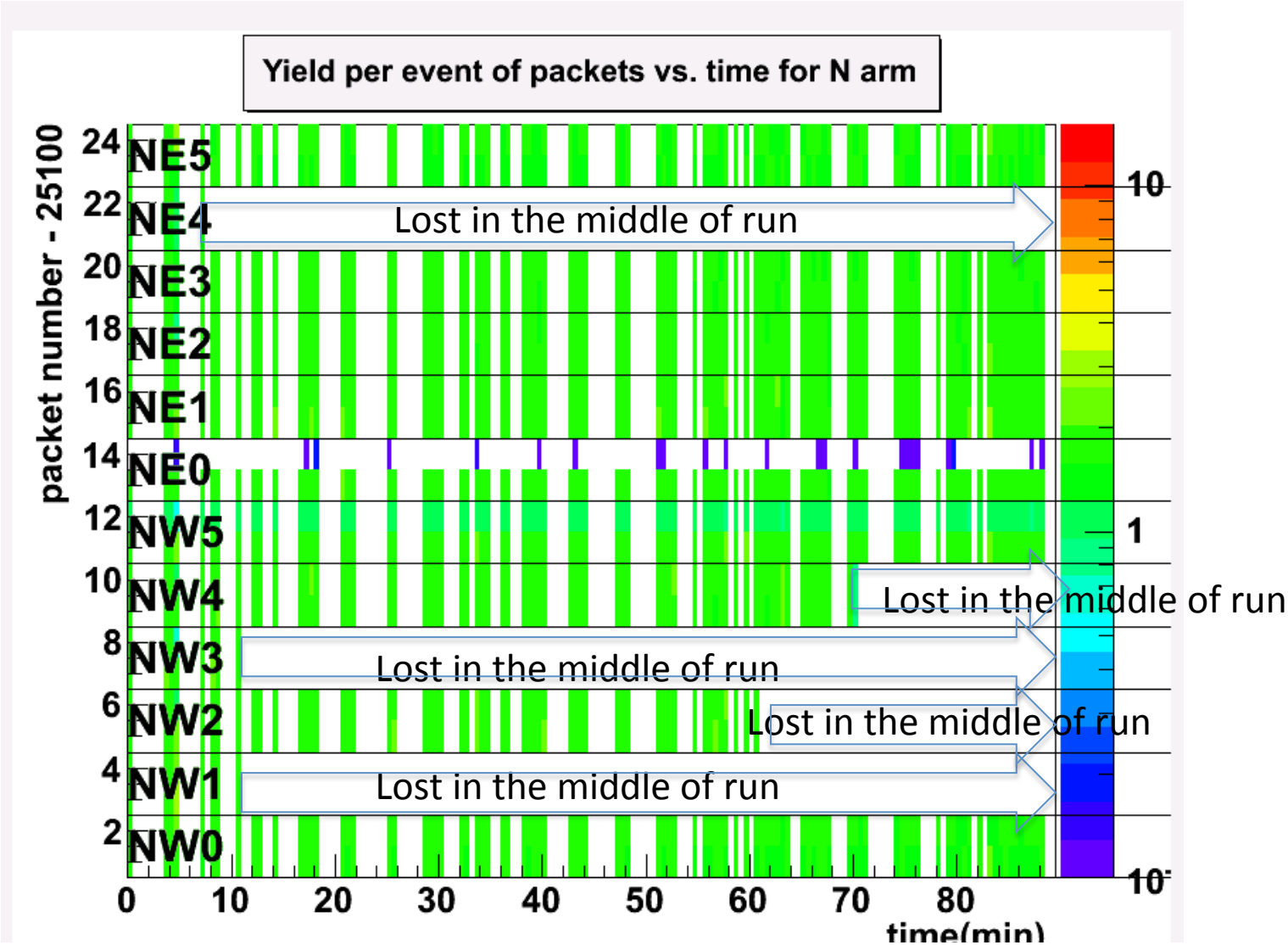


FVTX Packet Drop Off Issue

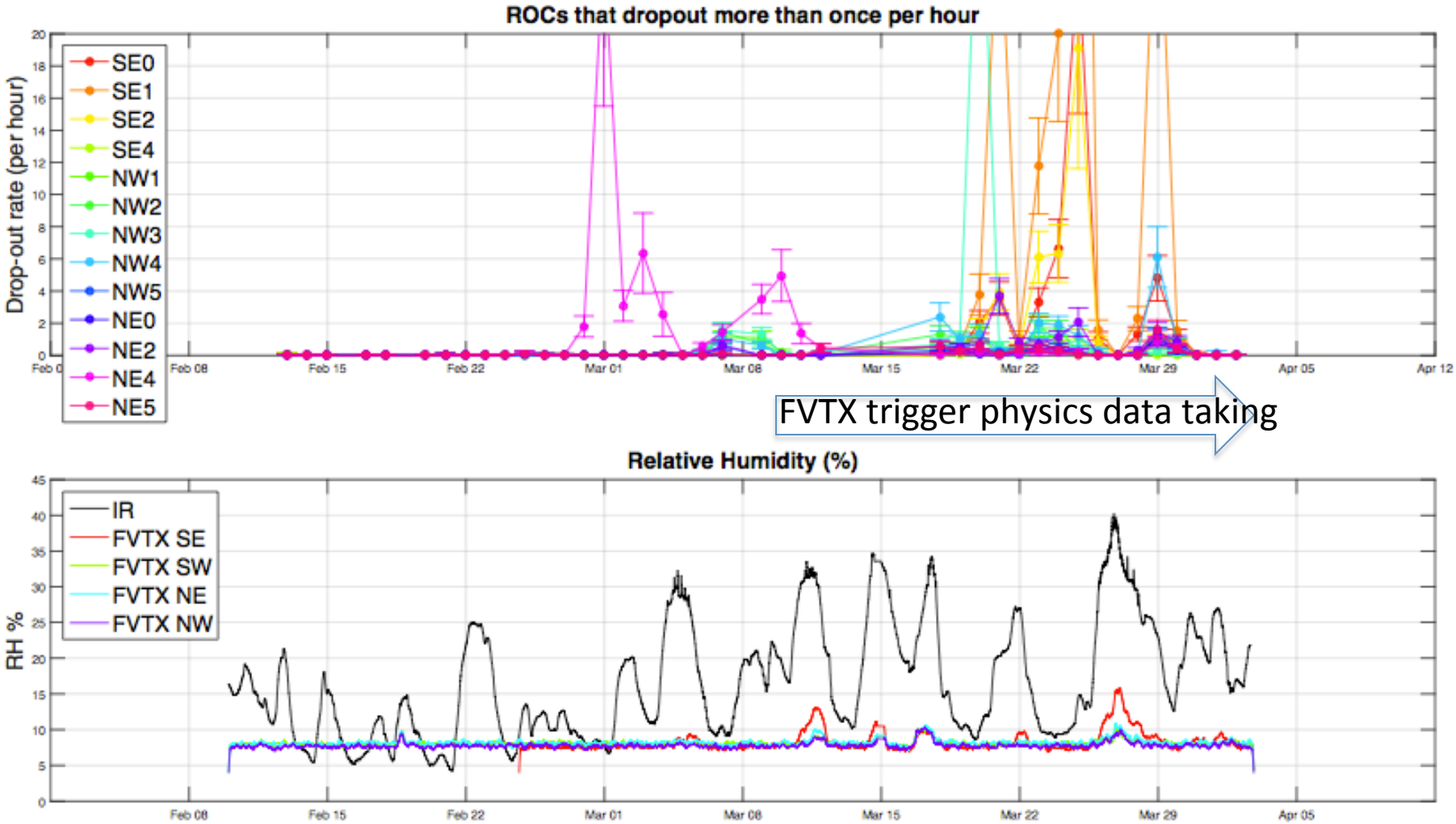




Packet Drop Off



Prospect of packet drop out



May be correlated with the humidity. The drop out may be quenched towards later Run15.

Run Summary

www.phenix.bnl.gov/WWW/run/daq/runcontrol/RunSummary.php?RunNumber=429027

Indico Run PHENIX goo 辞書 Yahoo! JAPAN ニュース 理研電話帳 アップル tmp Google マップ 関数電卓 ガーミンコネクト ONE TOKYO

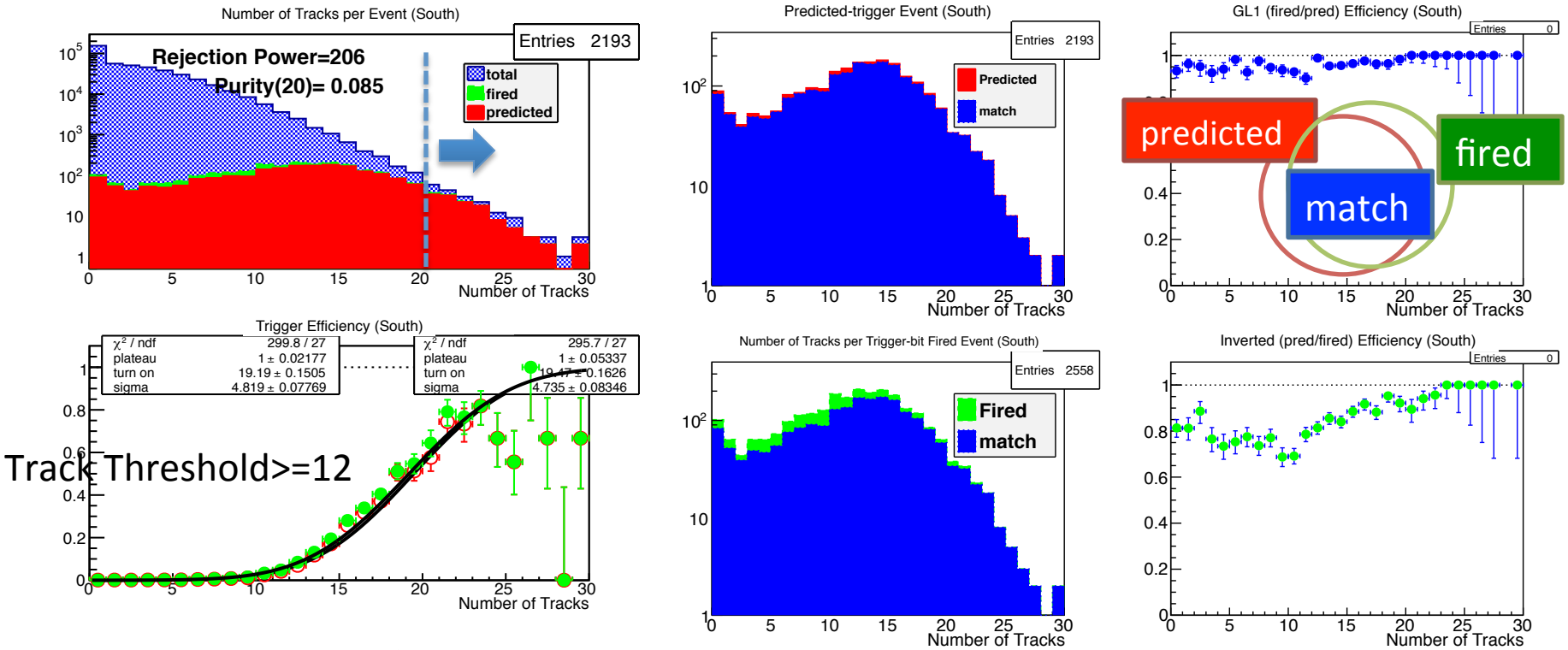
Run Summary | Broadcast Mess... | Muon Tracker -... | https://www.ph... | Garmin Connect... | PHENIX PLHF P... | AGENDA MODIF... | https://www.ph...

select * from trigger where runnumber = 429027 order by bitnb

Name	Bit Mask	Scale Down	State	Raw Trigger Count	Raw Trigger Rate	Live Trigger Count	Live Trigger Rate	Scaled Trigger Count	Scaled Trigger Rate	Livetime
BBCLL1(>0 tubes)	0x00000001	6050	Enabled	1169688569	628526.90	1056883911	567911.83	174662	93.85	0.90
BBCLL1(>0 tubes) novertex	0x00000002	10890	Enabled	2127777780	1143351.84	1922479875	1033035.93	176520	94.85	0.90
ZDCLL1wide	0x00000004	215	Enabled	24710880	13278.28	22645294	12168.35	104839	56.33	0.92
BBCLL1(noVtx)&(ZDCN||ZDCS)	0x00000008	497	Enabled	231229358	124250.06	211867230	113845.91	425436	228.61	0.92
BBCLL1(>0 tubes) narrowvtx	0x00000010	684	Enabled	448878466	241202.83	405572641	217932.64	592076	318.15	0.90
ZDCNS	0x00000020	215	Enabled	27946435	15016.89	25266707	13576.95	116975	62.86	0.90
ERT_4x4b	0x00000040	0	Enabled	220439	118.45	191497	102.90	191497	102.90	0.87
ERT_4x4a&BBCLL1	0x00000080	0	Enabled	1359673	730.61	1233561	662.85	1233561	662.85	0.91
ERT_4x4c&BBCLL1(narrow)	0x00000100	1	Enabled	1752209	941.54	1606211	863.09	803106	431.55	0.92
ERTLL1_E&BBCLL1(narrow)	0x00000200	0	Enabled	189453	101.80	174269	93.64	174269	93.64	0.92
FVTX_HighMult_N_AND_S&BBCLL1narrow	0x00000400	0	Enabled	180965	97.24	165763	89.07	165763	89.07	0.92
FVTX_HighMult_N_OR_S&BBCLL1narrow	0x00000800	5	Enabled	5133450	2758.44	4709189	2530.46	784864	421.74	0.92
MPC_N_S_A	0x00001000	0	Enabled	4630327	2488.09	4116489	2211.98	4116489	2211.98	0.89
MPC_S_B	0x00002000	0	Enabled	979705	526.44	875893	470.66	875893	470.66	0.89
MPC_S_C&ERTLL1_2x2	0x00004000	0	Enabled	46900	25.20	42905	23.05	42905	23.05	0.91
MPC_S_C&MPC_S_C	0x00008000	0	Enabled	17049	9.16	15410	8.28	15410	8.28	0.90
CLOCK	0x00010000	196077	Enabled	17513268989	9410676.51	15838626325	8510814.79	80777	43.41	0.90
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1163591	625.25	1163591	625.25	0.89
[illegible]	0x00040000	0	Enabled	55246	28.61	48484	26.05	48484	26.05	0.91
MPC_N_C&MPC_N_C	0x00080000	0	Enabled	23957	12.87	18051	9.70	18051	9.70	0.75
[illegible]	0x00100000	0	Enabled	28034	15.06	20087	10.79	20087	10.79	0.72
[illegible]	0x00200000	0	Enabled	11045	5.93	7760	4.17	7760	4.17	0.70
MUIDLL1_N1D&BBCLL1novtx	0x00400000	18	Enabled	4399122	2363.85	3908127	2100.01	205690	110.53	0.89
MUIDLL1_S1D&BBCLL1novtx	0x00800000	9	Enabled	2292861	1232.06	2063535	1108.83	206353	110.88	0.90
MUON_N_SG3&MUIDLL1_(1D||1H)&BBCLL1novtx(nppg)	0x01000000	0	Enabled	1013949	544.84	868316	466.59	868316	466.59	0.86

FVTX TRIGGER PARAMETER OPTIMIZATION

Statistics Estimate



- 200Hz x 6+2 weeks ~ 1Gevents x Uptime 0.66 = 660Mevents
- 660M x 0.08 purity ~ 50 Mevents

80M events 0-5% Central dAu in Run8