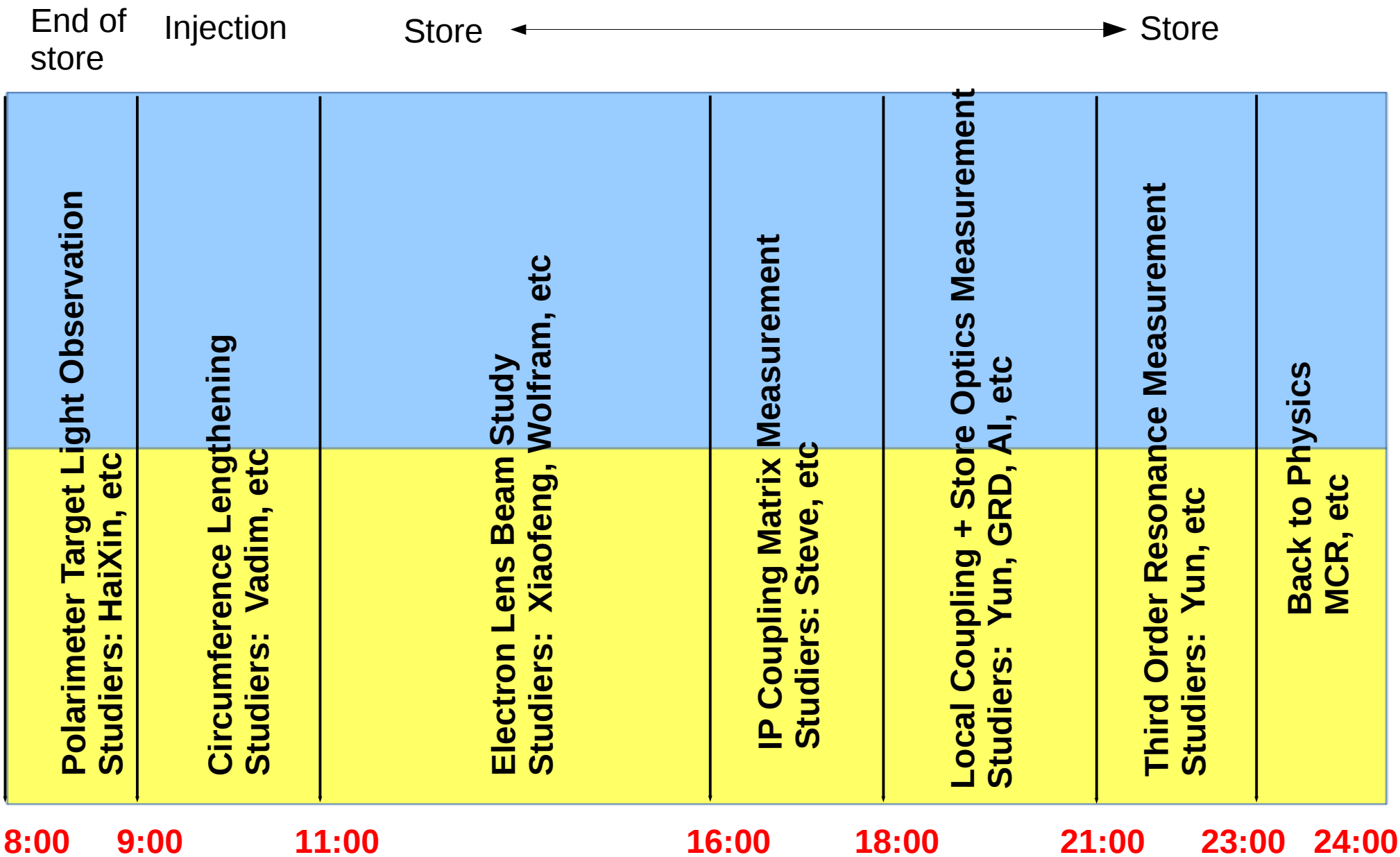
APEX Schedule for Feb.25, 2015

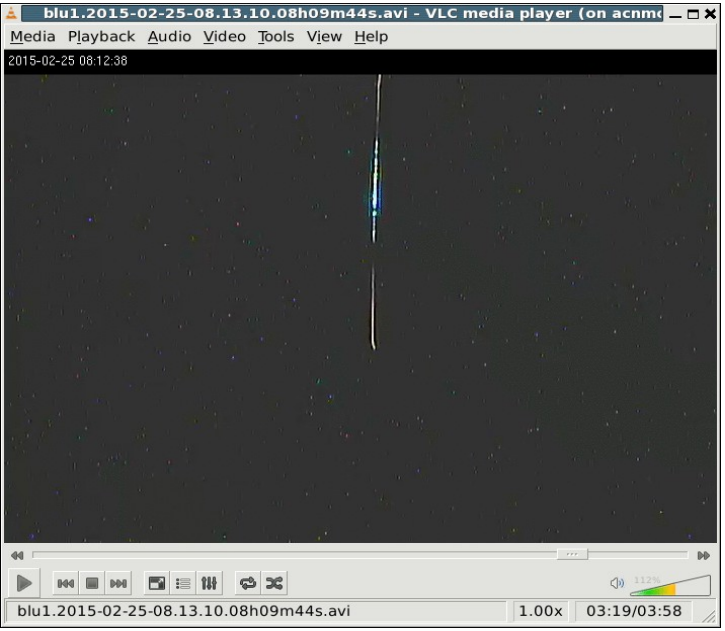


RHIC Polarimeter Target Test

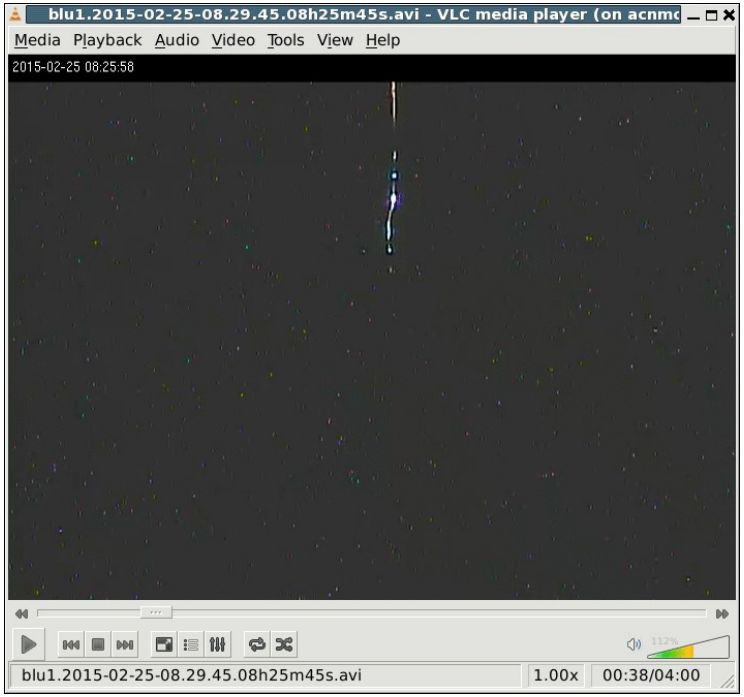
Haixin Huang, Dannie Steski, Anatoli Zelenski

Feb. 27, 2015
APEX Meeting

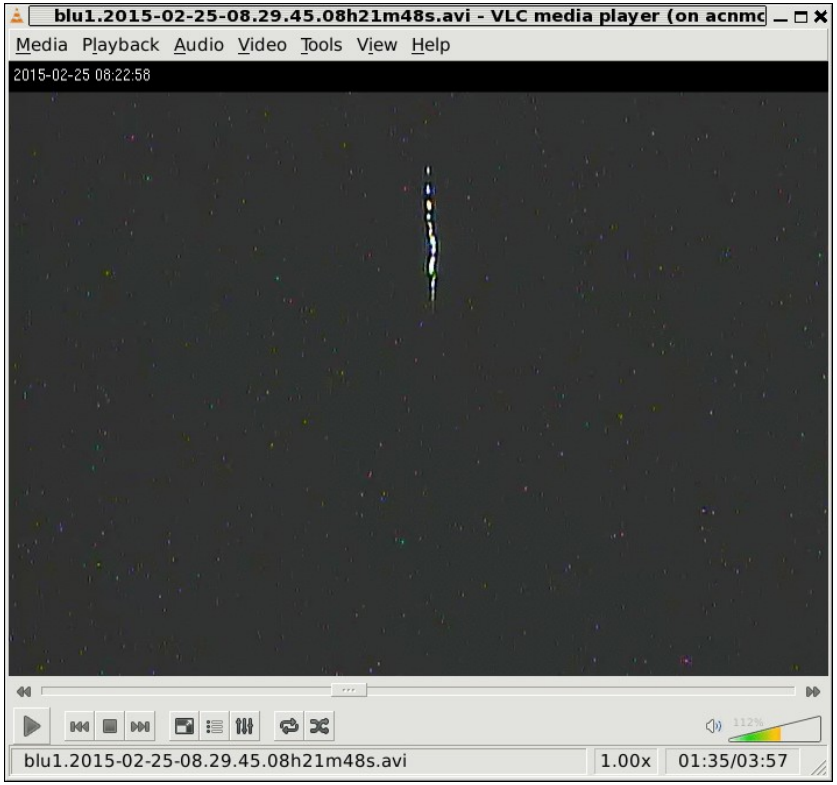
Blue1 Vertical Targets



Without fins



With fins



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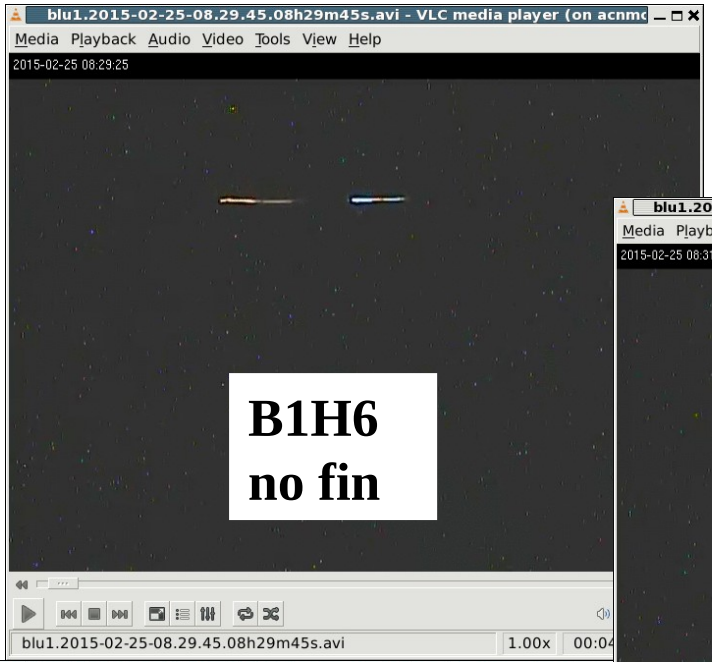
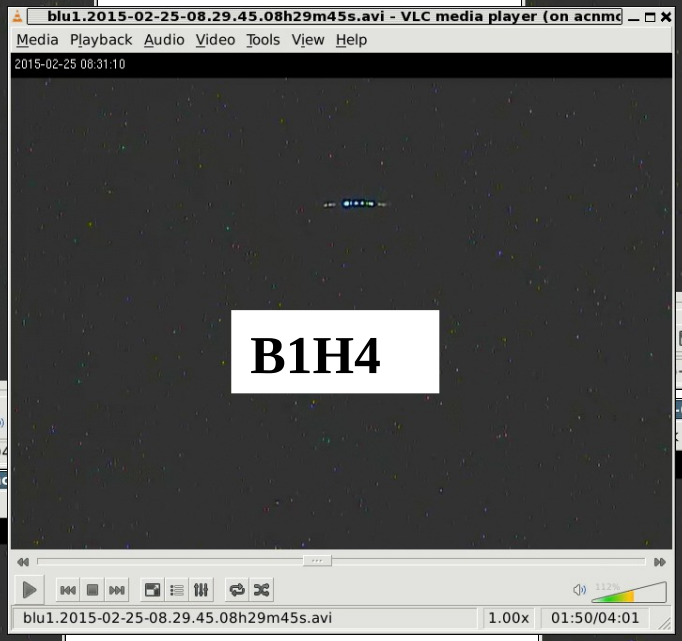
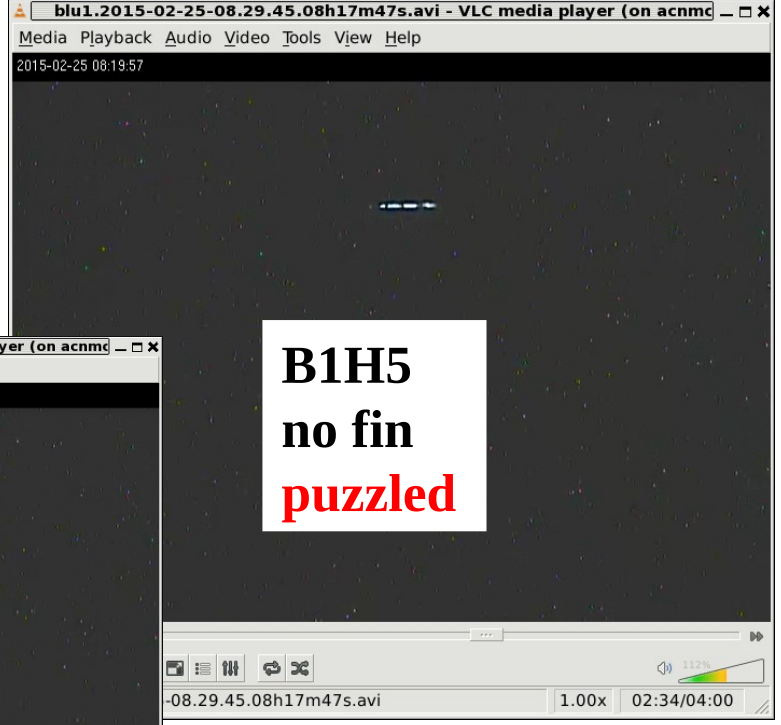
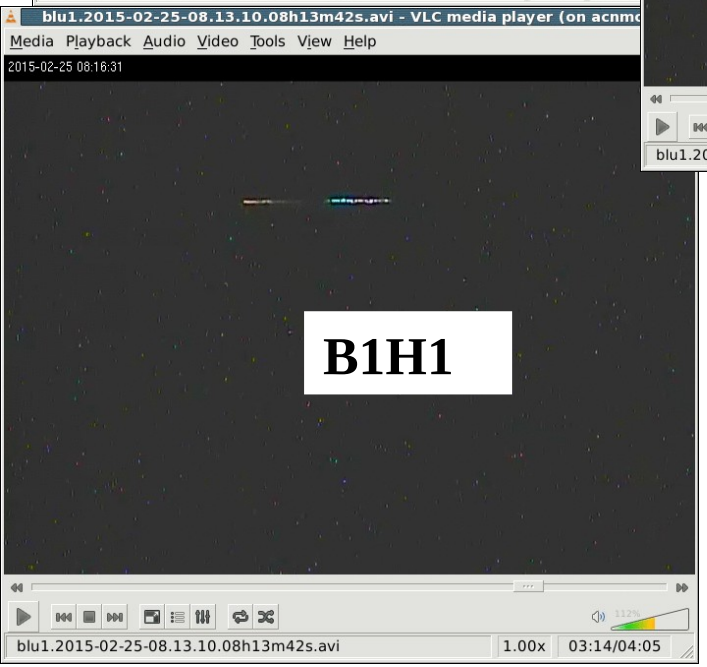
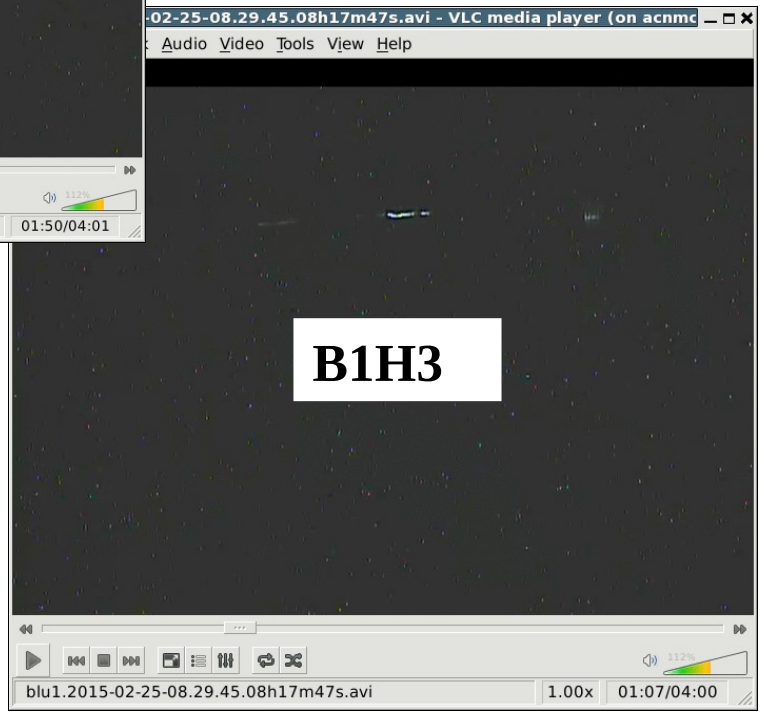
Horizontal Targets











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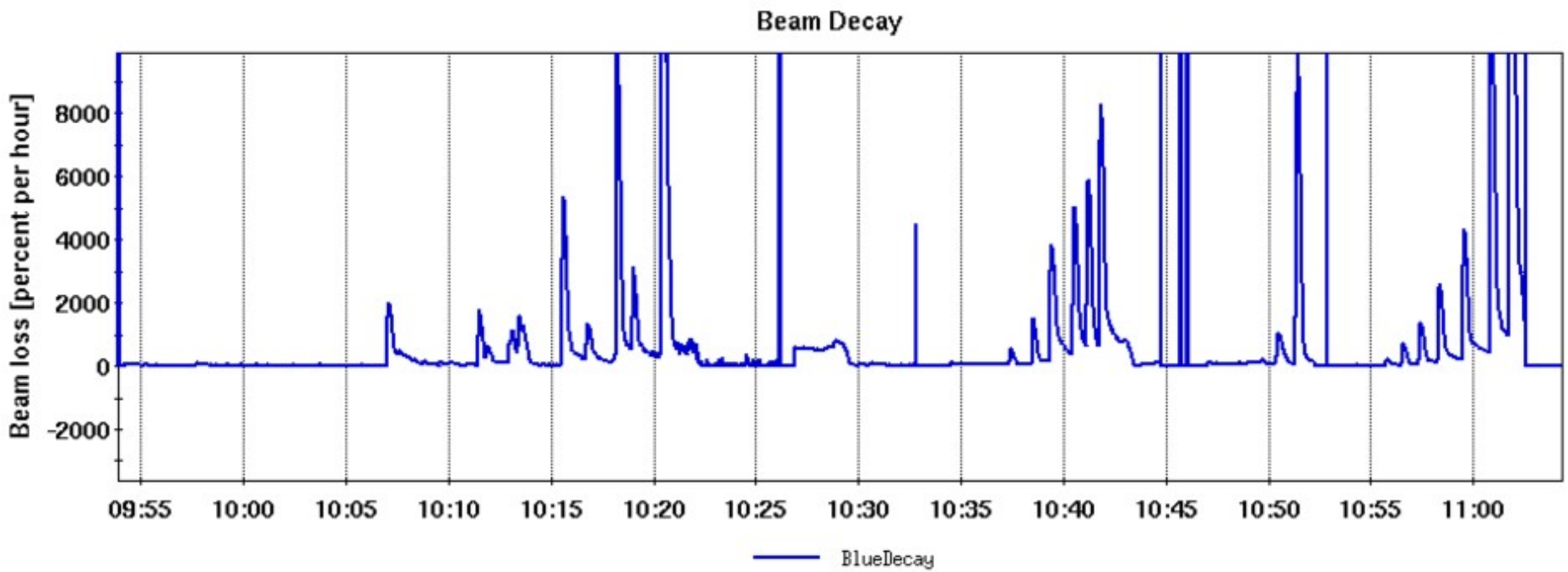
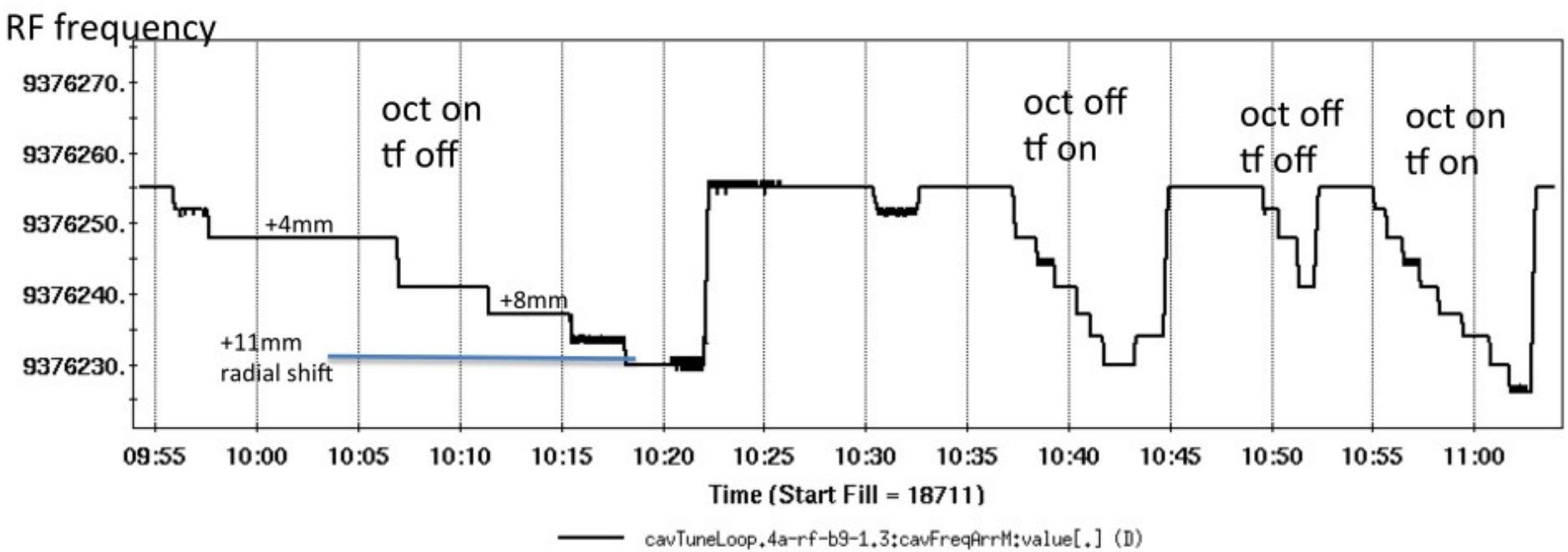
Circumference Lengthening

02/25/15 measurements

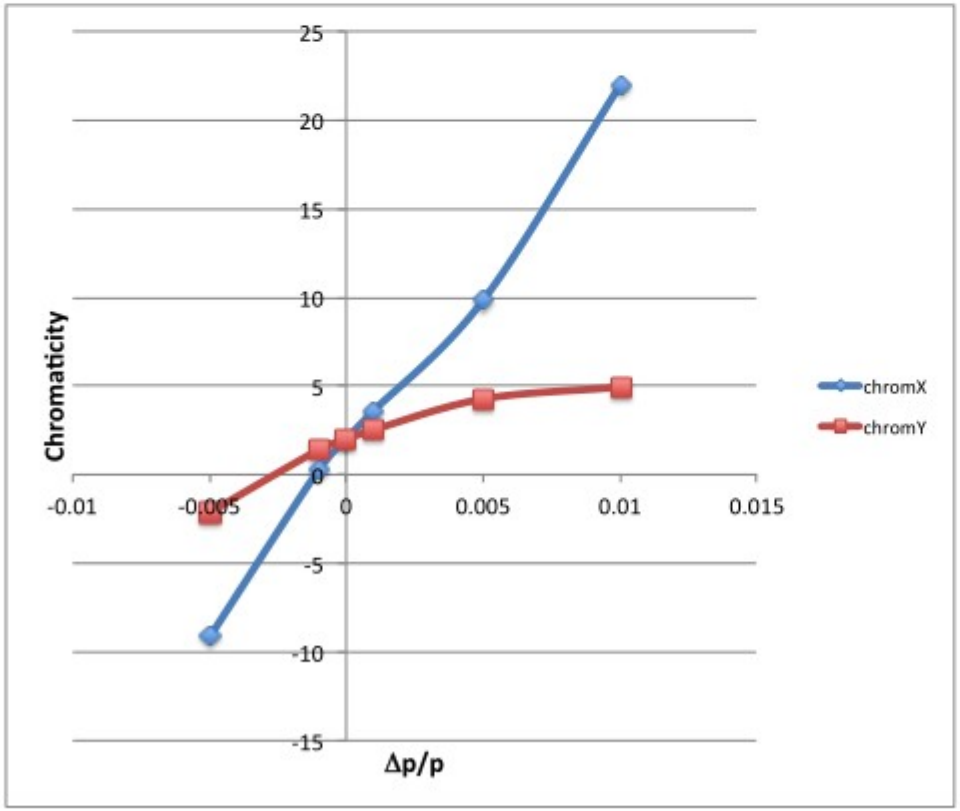
V. Ptitsyn, S. Brooks, Y. Hao


Beam Decay
Beam loss [percent per hour]
8000
6000
4000
2000
0
-2000
09:55
10:00
10:05
10:10
10:15
10:20
10:25
10:30
10:35
10:40
10:45
10:50
10:55
11:00
BlueDecay


RF frequency
9376270.
9376260.
9376250.
9376240.
9376230.
oct on
tf off
+4mm
+8mm
+11mm
radial shift
oct off
tf on
oct off
tf off
oct on
tf on
09:55
10:00
10:05
10:10
10:15
10:20
10:25
10:30
10:35
10:40
10:45
10:50
10:55
11:00
Time (Start Fill = 18711)
cavTuneLoop.4a-rf-b9-1.3:cavFreqArrM:value[.] (D)

Chromatic effects

- Surprisingly large nonlinear chromatic effect were seen at the injection



MAD calculation

The chromaticity dependence looks similar either with or without tune feedback

Second order chromaticities:
X:~880
Y:~300

Coupling and Optics Measurement at Store

Al, Guillaume, Yun

APEX Session: Feb. 25, 2015 , p-p run

General

Beam Time: used 3 hours

Ramps : 2 , non-collisional pattern 12*12

What had been done:

→ measured coupling angles at store / injection

→ measured set tunes at store without collision

→ measured tune shifts due to separation bumps at IR6/IR8

→ ramp optics measurement

→ store optics measurement with physics store condition

→ local coupling measurement

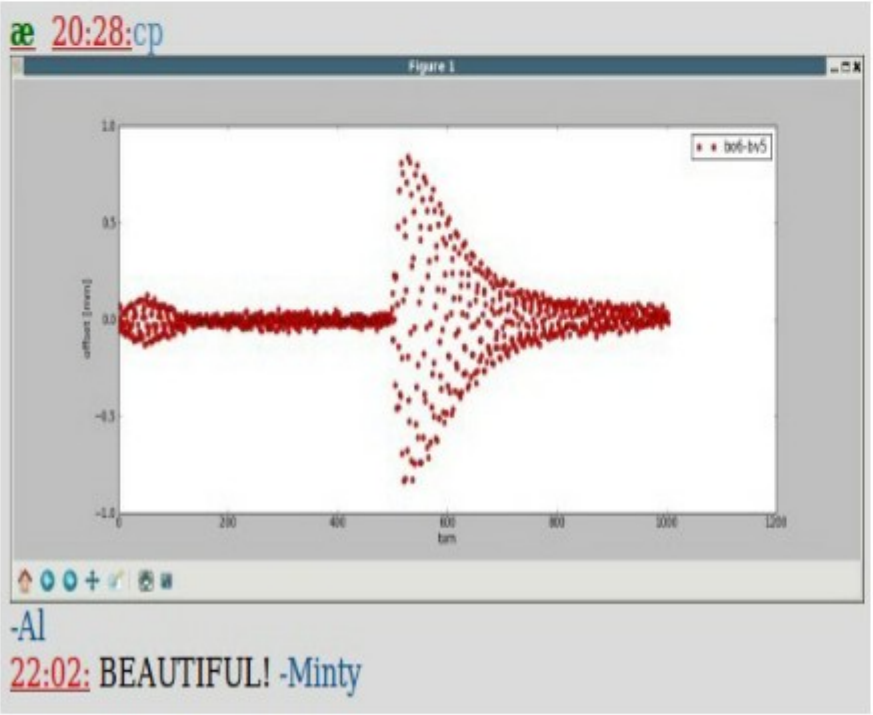
→ chromaticity measurement with physics store condition

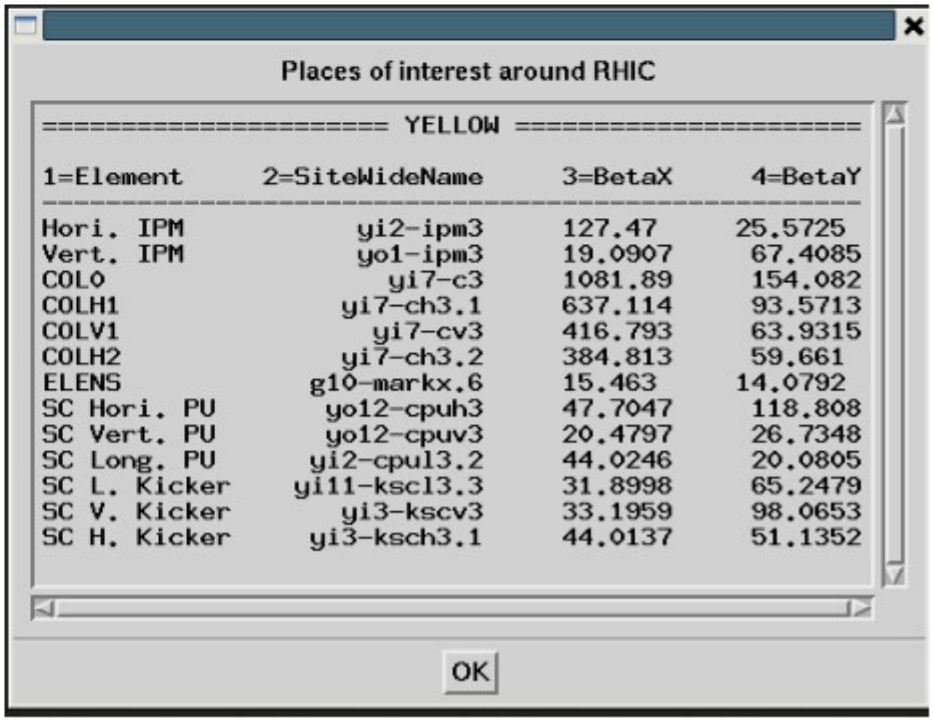
→ momentum aperture

Data analysis in progress:

Store Optics Measurement

- Both Al and Guillaume took data
- Fine data analysis on going
- Some examples





Places of interest around RHIC

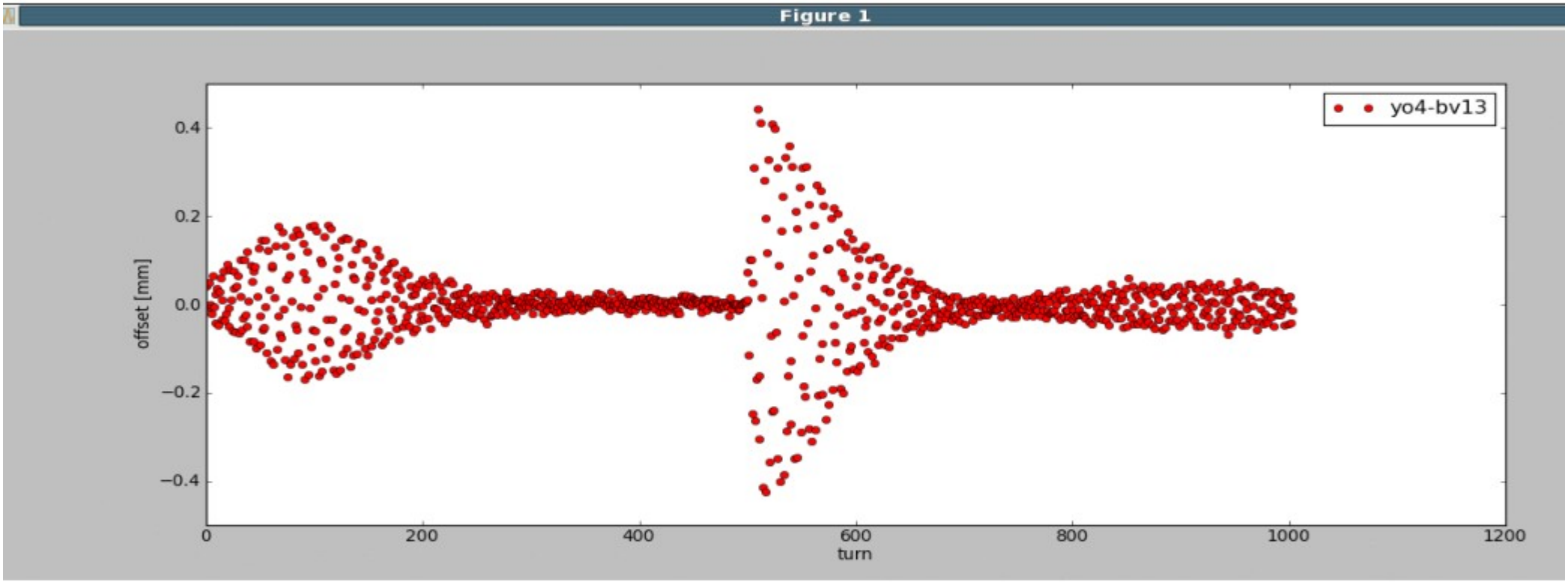
========== YELLOW ==========

1=Element	2=SiteWideName	3=BetaX	4=BetaY
Hori. IPM	yi2-ipm3	127.47	25.5725
Vert. IPM	yo1-ipm3	19.0907	67.4085
COLO	yi7-c3	1081.89	154.082
COLH1	yi7-ch3.1	637.114	93.5713
COLV1	yi7-cv3	416.793	63.9315
COLH2	yi7-ch3.2	384.813	59.661
ELENS	g10-markx.6	15.463	14.0792
SC Hori. PU	yo12-cpuh3	47.7047	118.808
SC Vert. PU	yo12-cpuv3	20.4797	26.7348
SC Long. PU	yi2-cpul3.2	44.0246	20.0805
SC L. Kicker	yi11-kscl3.3	31.8998	65.2479
SC V. Kicker	yi3-kscv3	33.1959	98.0653
SC H. Kicker	yi3-ksch3.1	44.0137	51.1352

OK

Local Coupling measurement

- Local coupling at visible at BPMs: (beam kicked H & V separated by 500 turns)

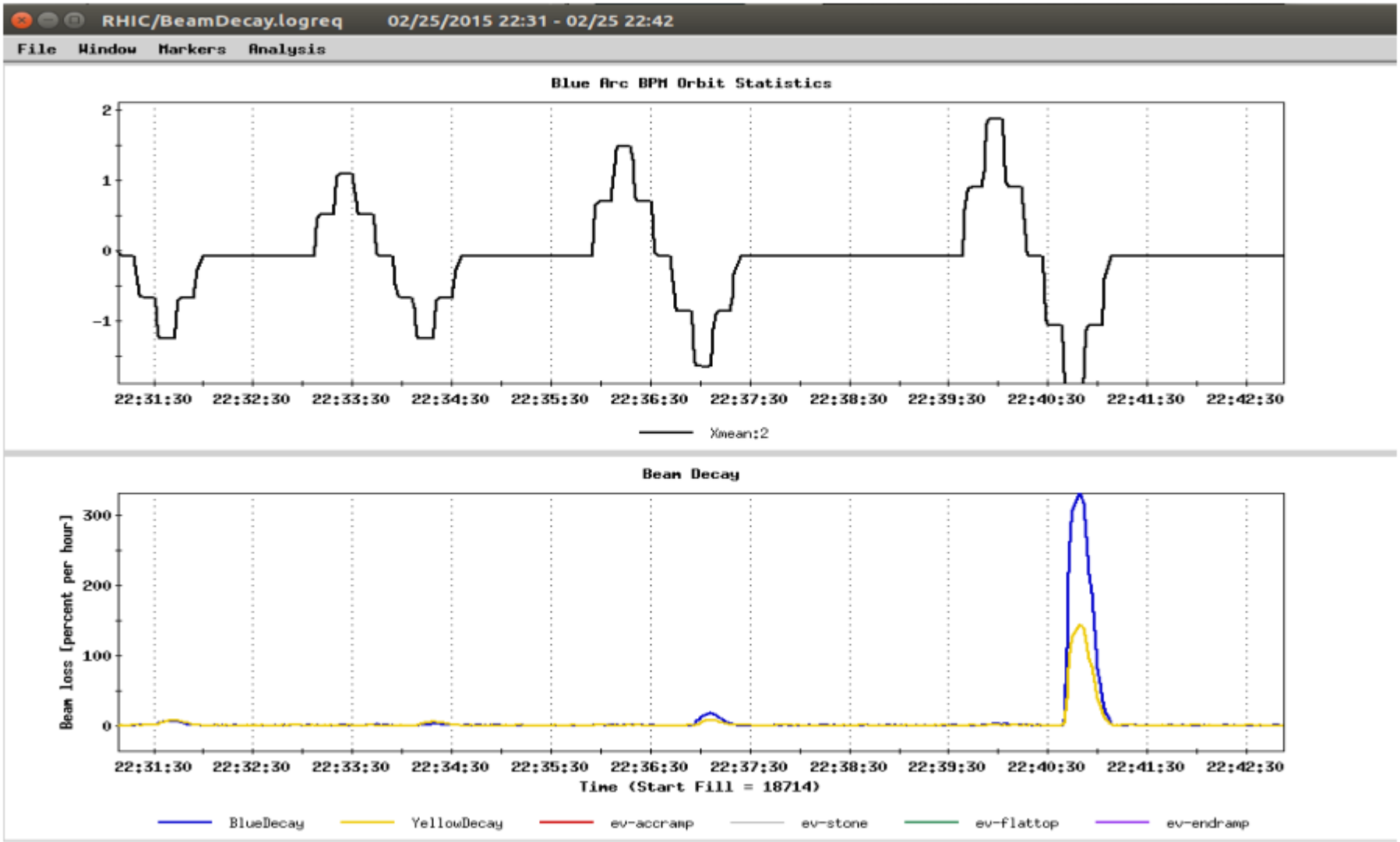


- One data set for local coupling measurement
  (kicked H &V direction same time)

```
æ  20:47:cp /operations/app_store/RunData/currentRun/18713/RHIC/Orbit/TBT/Blue/tbt.Wed_Feb_25_20:42:36_2015.sdds

/operations/app_store/RunData/currentRun/18713/RHIC/Orbit/TBT/Yellow/tbt.Wed_Feb_25_20:42:41_2015.sdds
-Al
```

Momentum Aperture Measurement



Maximum shift: 1.25 mm, (dp/p0)_max =1.23e-3 .

Next APEX

- Date & Time:

  8am-midnight, March 11, Wednesday

- Beam time request:

  APEX weekly meeting

  LCR, 10am, this Friday