Data Quality Assurance Update for 2005 Run

STAR Collaboration Meeting

BNL, *February 21-26, 2005*

Lanny Ray
University of Texas at Austin
For the STAR QA Team

Responsibilities of QA

Fast Offline:

- Identify gross problems with the detector, calibrations and software, *i.e.* is everything switched on that should be?
- Provide rapid reporting to shift leaders and experts.
- Help the experiment run more efficiently.

DST Production:

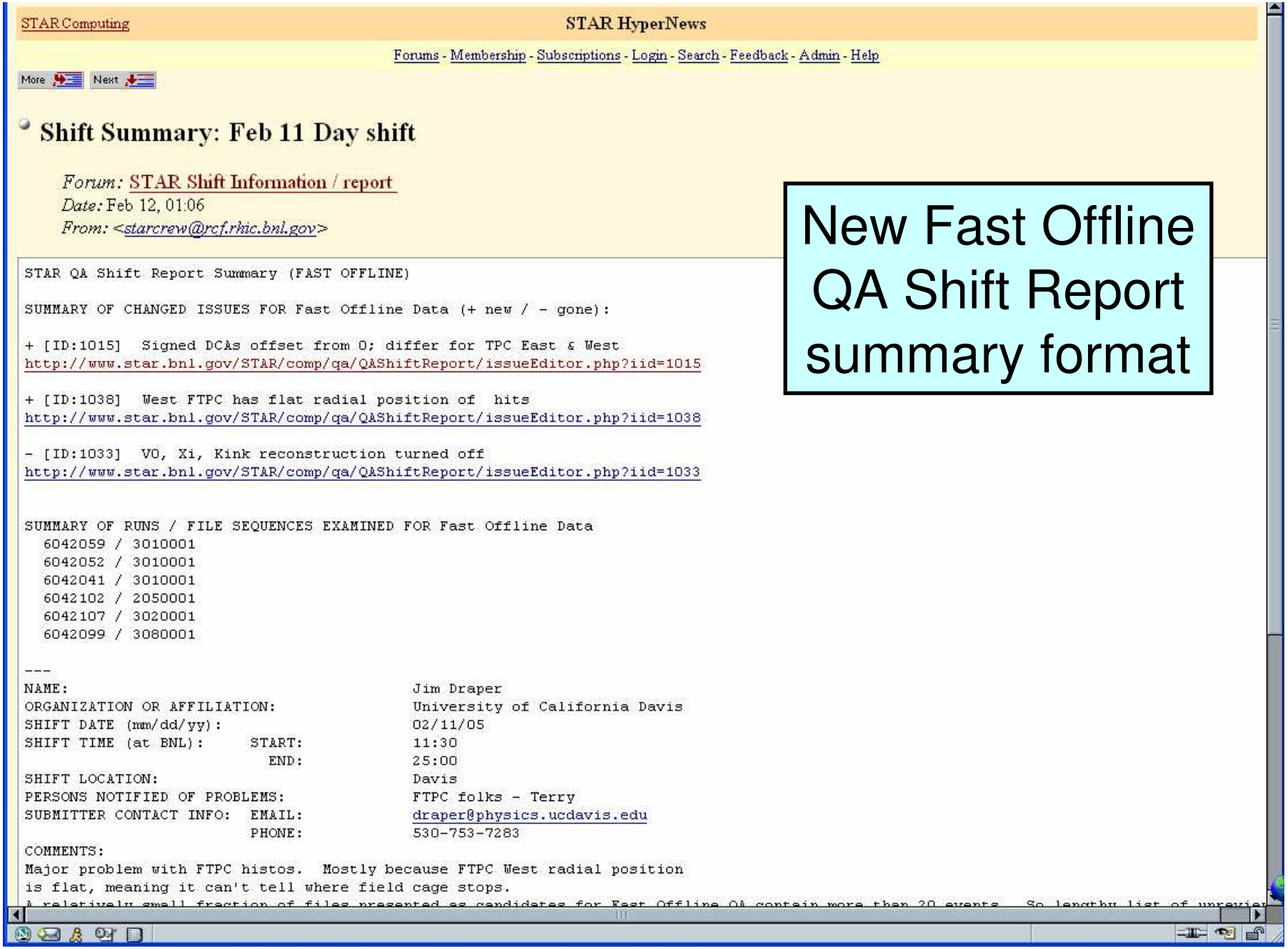
- Validate data and software through DST production given the detector configuration and trigger conditions.
- Provide rapid reporting to reduce wasted production cpu cycles.
- Notify experts when problems are suspected and follow-up on problem resolution.
- Help the DST production run more efficiently.
- Help code development and calibrations converge more rapidly.

New this year

- Updated documentation
- Optimized FTPC histograms
- PMD histograms
- SVT-TPC global tracks in QA
- Minbias and high BEMC tower trigger QA sets
- Signed DCA histogram (space charge)
- Streamlined issues reporting (report form)
- Interface QA Shift reports with Electronic Log

Documentation available for QA shift crew

- QA Overview
- Instructions for QA shift duties
- Quick-Start step-by-step instructions for use of web based QA pages
- QA daily shift report form and instructions
- Example histograms and explanation
- Contacts



STAR Computing — STAR HyperNews

Forums - Membership - Subscriptions - Login - Search - Feedback - Admin - Help

More Next

Shift Summary: Feb 11 Day shift

Forum: STAR Shift Information / report
Date: Feb 12, 01:06
From: <starcrew@rcf.rhic.bnl.gov>

```
STAR QA Shift Report Summary (FAST OFFLINE)

SUMMARY OF CHANGED ISSUES FOR Fast Offline Data (+ new / - gone):

+ [ID:1015]  Signed DCAs offset from 0; differ for TPC East & West
http://www.star.bnl.gov/STAR/comp/qa/QAShiftReport/issueEditor.php?iid=1015

+ [ID:1038]  West FTPC has flat radial position of  hits
http://www.star.bnl.gov/STAR/comp/qa/QAShiftReport/issueEditor.php?iid=1038

- [ID:1033]  V0, Xi, Kink reconstruction turned off
http://www.star.bnl.gov/STAR/comp/qa/QAShiftReport/issueEditor.php?iid=1033


SUMMARY OF RUNS / FILE SEQUENCES EXAMINED FOR Fast Offline Data
  6042059 / 3010001
  6042052 / 3010001
  6042041 / 3010001
  6042102 / 2050001
  6042107 / 3020001
  6042099 / 3080001

---
NAME:                                   Jim Draper
ORGANIZATION OR AFFILIATION:            University of California Davis
SHIFT DATE (mm/dd/yy):                  02/11/05
SHIFT TIME (at BNL):     START:         11:30
                           END:         25:00
SHIFT LOCATION:                         Davis
PERSONS NOTIFIED OF PROBLEMS:           FTPC folks - Terry
SUBMITTER CONTACT INFO:  EMAIL:         draper@physics.ucdavis.edu
                         PHONE:         530-753-7283
COMMENTS:
Major problem with FTPC histos.  Mostly because FTPC West radial position
is flat, meaning it can't tell where field cage stops.
A relatively small fraction of files presented as candidates for Fast Offline QA contain more than 20 events.  So lengthy list of unreview
```

New Fast Offline QA Shift Report summary format

New format for QA reports:

Minimal comments

Links to technical issues; document occurrence, subsequent changes, and resolution of problems

4/17/2005

Data Report for Fast Offline Data:

Run ID:	6042099
File Sequence number:	3080001
Production Job ID:	na
Production job status (OK or crashed?):	ok
Number of events in this file:	215
Number of events with reconstructed primary vertex:	140
QA job status (OK or crashed?):	ok

Comments for this run:

MB data. / Successful / Detectors tpc svt ftpc ssd. / Same reference as above.
emc histos empty, as said above.
Some FTPC+SVT histos at usual tiny percentage.
Most/all FTPC histos missing???

Issues:

- [ID:1001] TPC RDO-20 out
- [ID:1003] TPC drift velocity/T0 calibration incorrect
- [ID:1016] Hot TPC Anodes
- [ID:1019] FTPC gaps in track distributions
- [ID:1023] Gaps in azimuthal coverage of BEMC
- [ID:1027] Bemc hot channel
- [ID:1032] SVT laser spots unstable; intermittent
- [ID:1038] West FTPC has flat radial position of hits
- [ID:1002] Low primary vertex-finding efficiency

QA Shift Summaries Added to Electronic Log Book

STAR Shift log

Entries from Feb 13, 2005 to Feb 15, 2005

Go to bottom

Sunday - February 13, 2005

15:14 (00:00) QA	**Summary Report** - Night Shift STAR QA Shift Report Summary (FAST OFFLINE) SUMMARY OF CHANGED ISSUES FOR Fast Offline Data (+ new / - gone): - [ID:1038] West FTPC has flat radial position of hits http://www.star.bnl.gov/STAR/comp/qa/QAShiftReport/issueEditor.php?iid=1038 - [ID:1019] FTPC gaps in track distributions http://www.star.bnl.gov/STAR/comp/qa/QAShiftReport/issueEditor.php?iid=1019 - [ID:1002] Low primary vertex-finding efficiency http://www.star.bnl.gov/STAR/comp/qa/QAShiftReport/issueEditor.php?iid=1002 SUMMARY OF RUNS / FILE SEQUENCES EXAMINED FOR Fast Offline Data 6044028 / 2060001 --- NAME: Jim Draper ORGANIZATION OR AFFILIATION: University of California Davis SHIFT DATE (mm/dd/yy): 02/13/05 SHIFT TIME (at BNL): START: 09:00 END: 25:00 SHIFT LOCATION: Davis PERSONS NOTIFIED OF PROBLEMS: Terry for FTPCs. Gene SUBMITTER CONTACT INFO: EMAIL: draper@physics.ucdavis.edu PHONE: 530-753-7283

Detectors in QA - 2005

QA Shift Subset

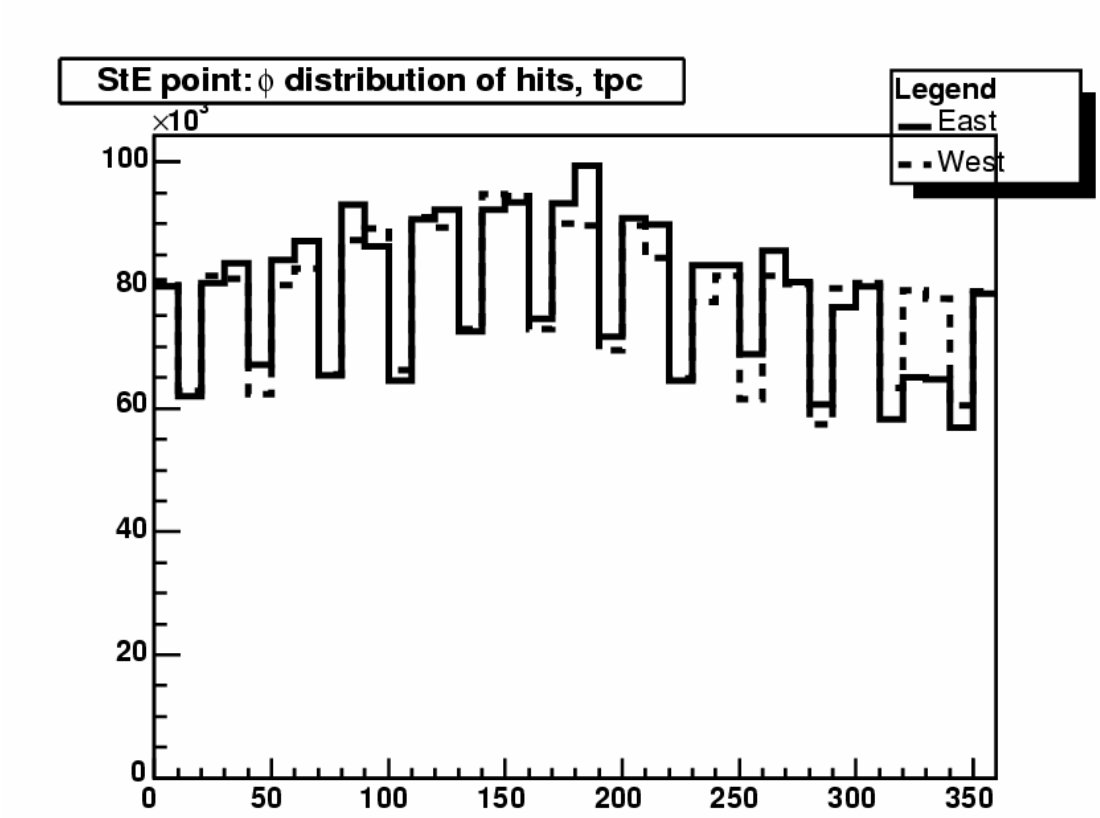
- **What's in:**
  - TPC
  - SVT
  - FTPC East and West
  - BEMC
  - BSMD η and ϕ,
  - PMD
- **What's not in:**
  - SSD
  - EEMC
  - ESMD
  - TOFr, TOFp, pVPD
  - (Engineering run)

QA System Performance

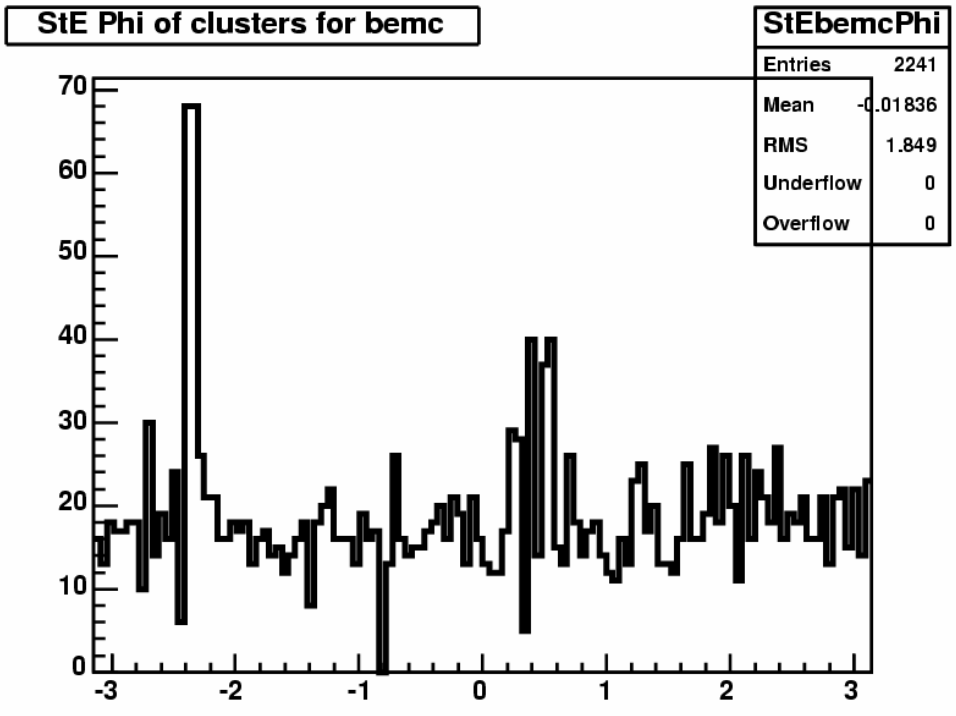
- Consolidation of QA daemon, more reliable performance.
- We continue to have disk space limitation which temporarily stops fast offline production once every week or two.
- QA remains vulnerable to problems in AFS, NFS, RCF – which STAR cannot control.
- QA is up and running almost always, but something seems to cause trouble every couple of weeks; requires ongoing vigilance.

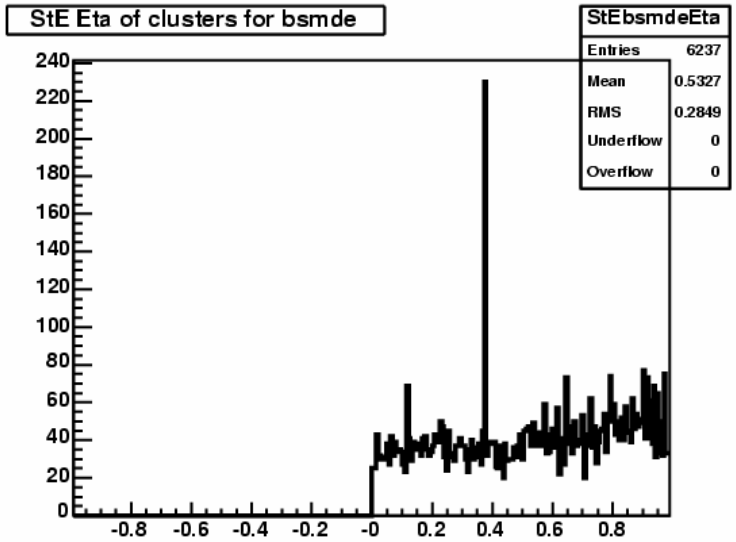
Examples of issues in Run 5

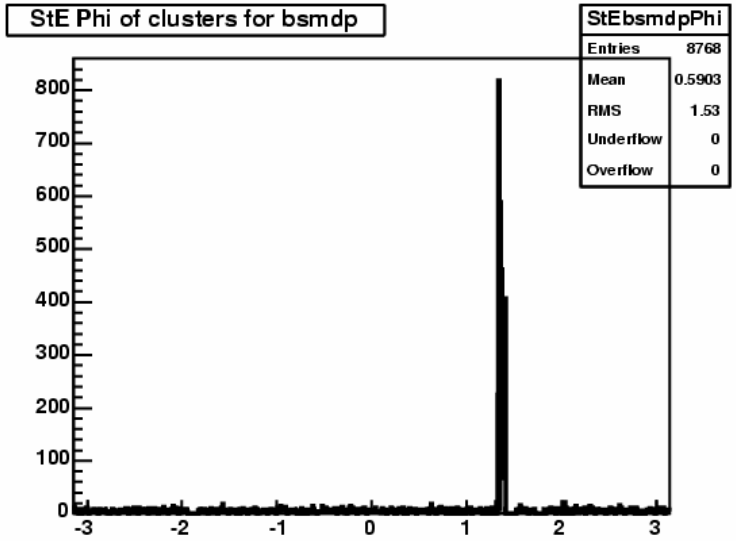
Azimuth dependent background; similar to the d+Au run



Hot channels in BEMC, BSMD η,φ



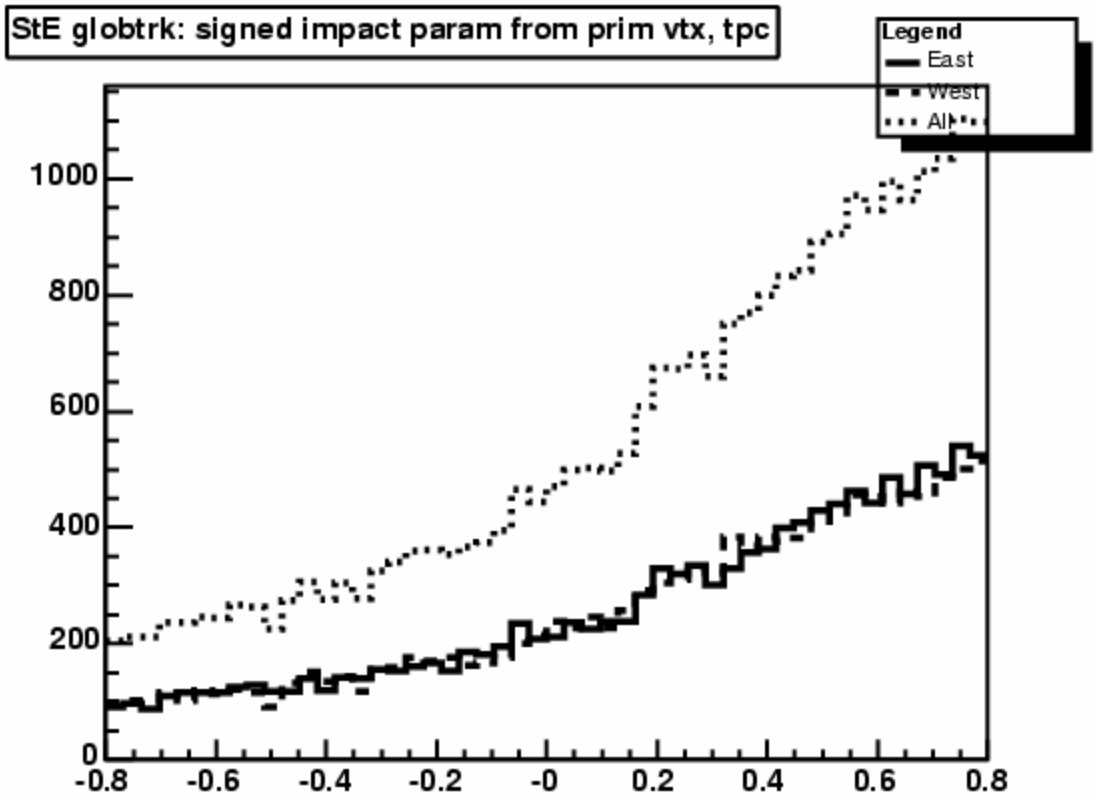




Monitor space charge effects:

Signed DCAs for TPC East and West tracks

Offset from zero indicates net, uncorrected space charge distortion.



The QA Team

- Many, many thanks go to Herb Ward for establishing the present QA browser and framework. Herb has left STAR but his excellent contributions continue to have impact.
- Michael Daugherity (UT grad. student) has assumed responsibility for the QA browser and provides general QA infrastructure support.
- Gene Van Buren continues to refine the shift report web form, archives and QAMaker plus helping the QA shift crew.
- Of course Jerome and Lidia maintain the Fast Offline and DST production.