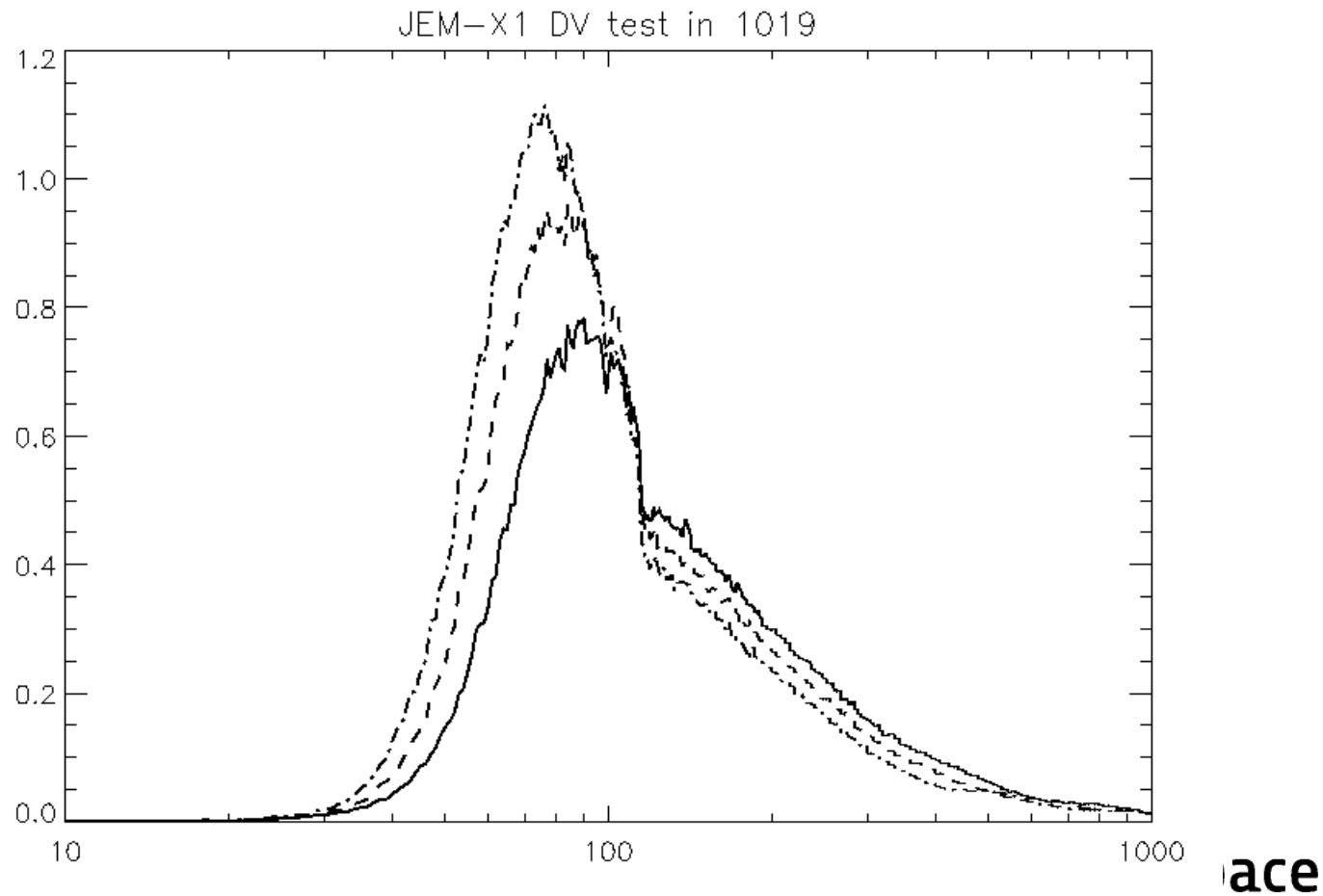


Crab calibration

Calibration

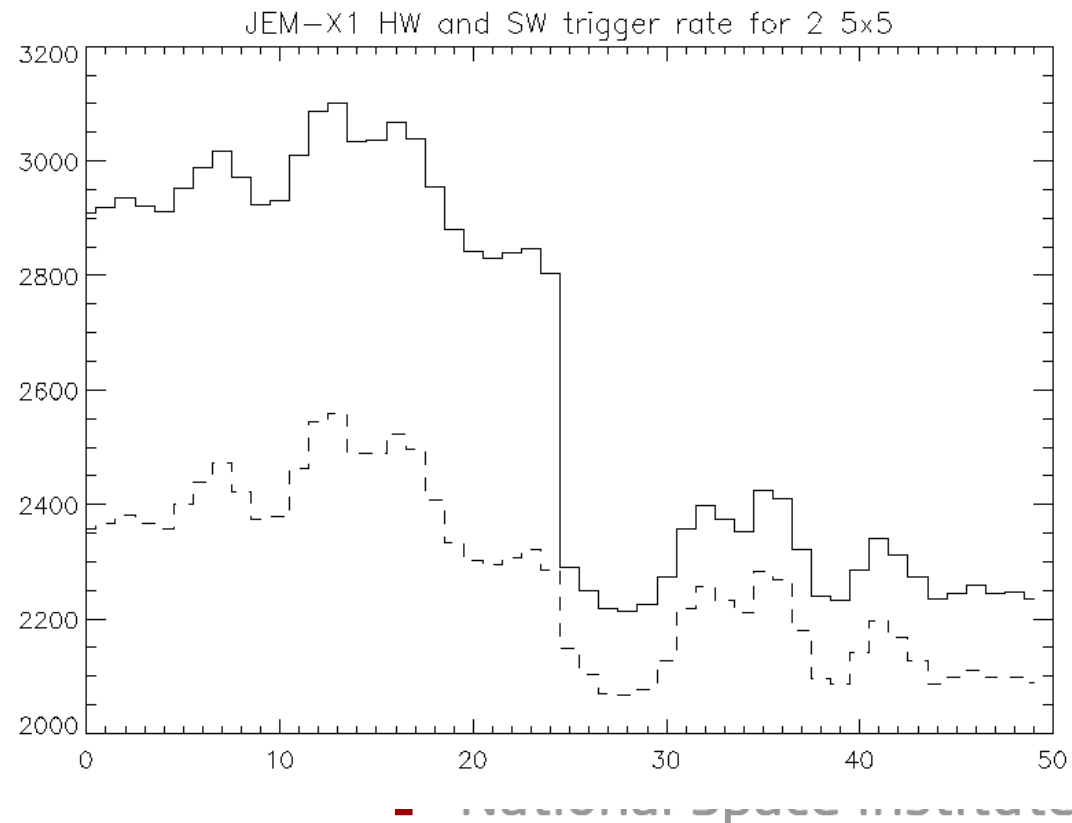
- Circle of 4 degree off axis completed in 774 and 839 Crab calibrations
 - Systematics in light curves on the order of 5% due to the collimator
- In 902 Crab staring during start of orbit to check the gain correction and electronic efficiency after HV activation
- Recent Crab calibration (1019):
 - JEM-X request for checking electronic efficiency by stepping down the DV (3 different levels with each 6 ks Crab on-axis)
 - Diagnostic data request with and without increased drift voltage
 - Purpose: Verification of event selection criteria
 - The 2 5x5 dithers on the Crab were performed with different drift voltage settings
 - Double triggers due to particle tracks is reduced
 - Analysis of data is ongoing
- Big question: do we have “pile-up” problems that introduce a reduced efficiency as function the particle rate??

DV-test: observing the same Crab spectrum at different gain



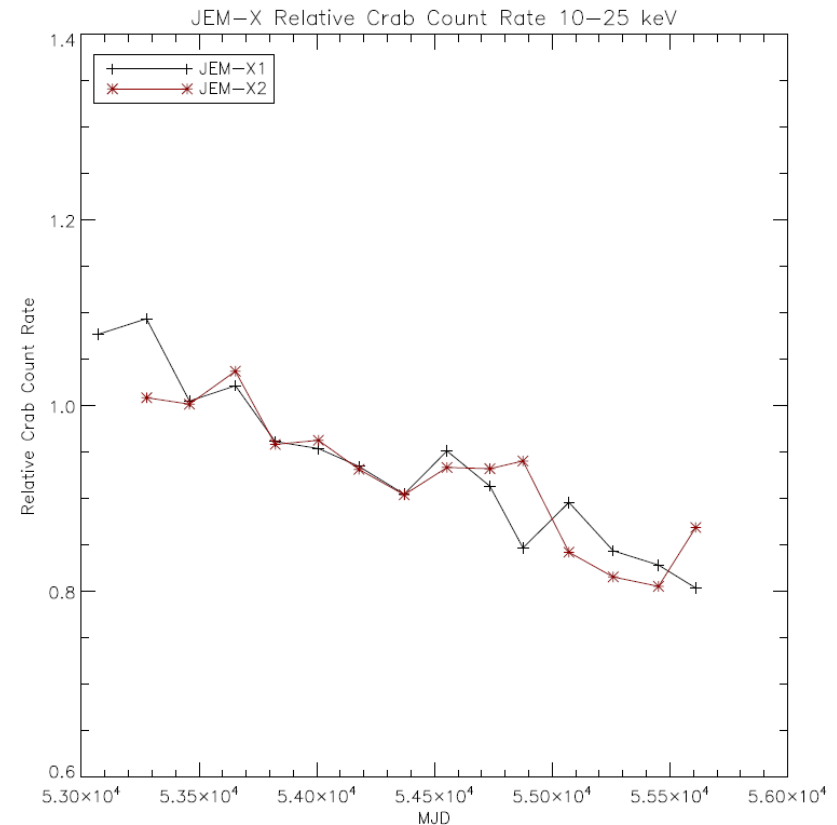
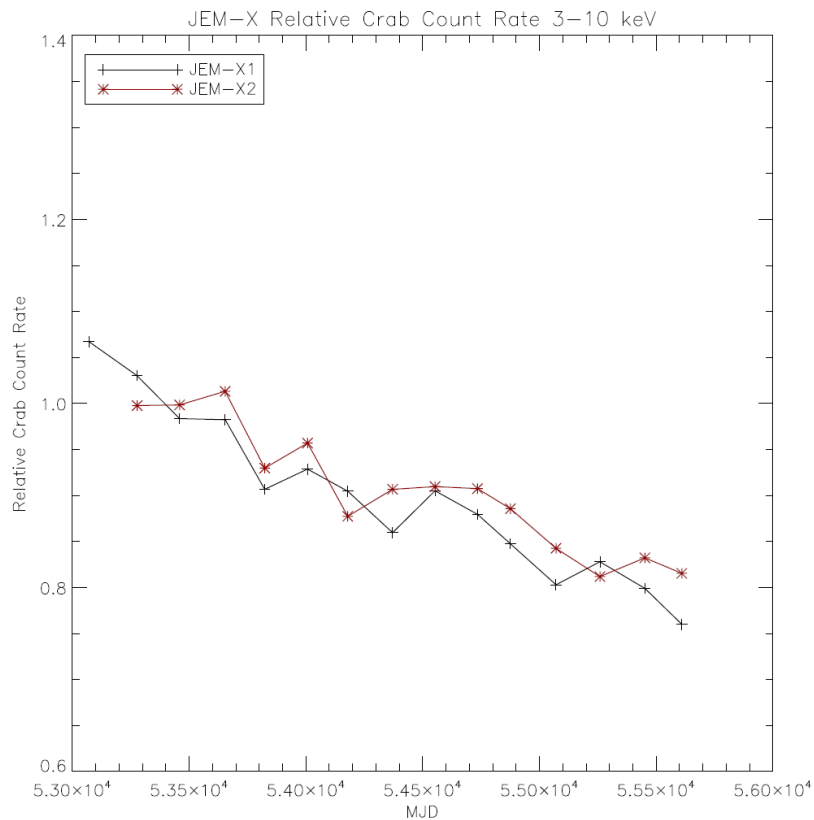
Drift voltage test on 5x5 dither

- Double trigger rate is reduced from $\sim 20\%$ to $< 5\%$



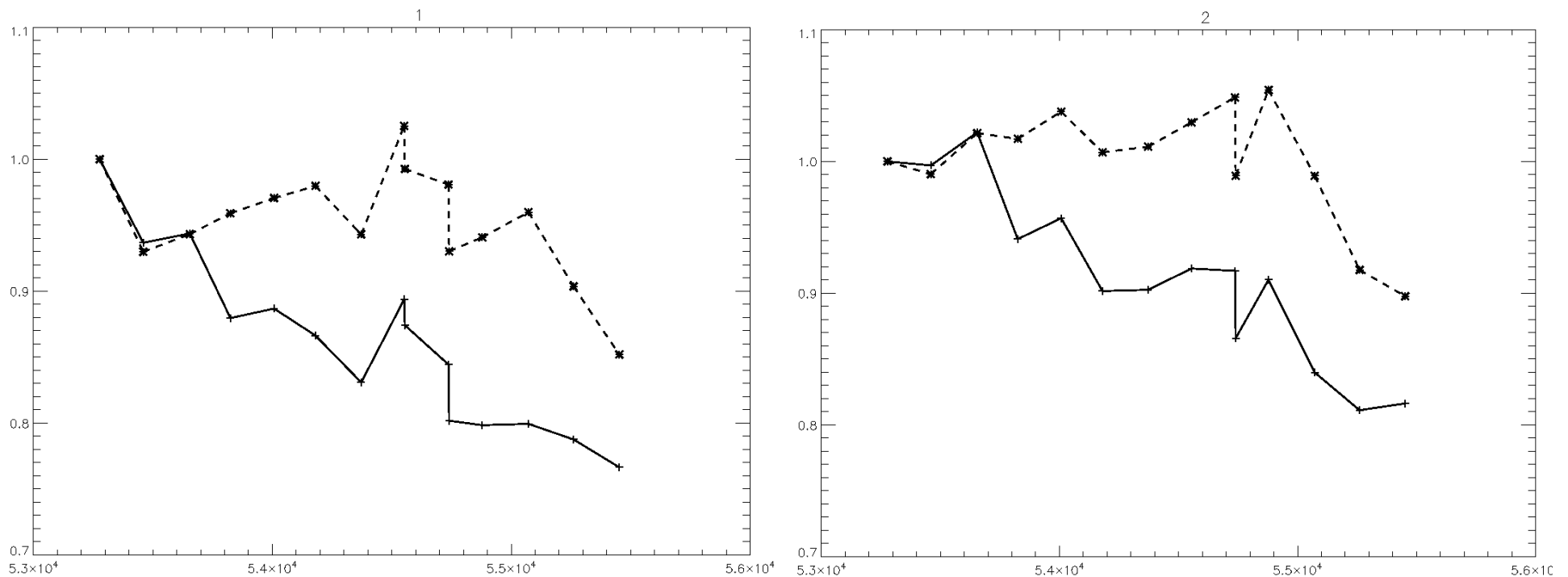
JEM-X1+2 Crab offline analysis

- Standard analysis generally confirm the Crab variability results
- Attempt at “first principle” analysis show general decay trend with variability
 - correlation with cosmic ray flux???



JEM-X Crab trend

- Work in progress: The overall trend may include unknown dead-time effects due to increased particle rate?
- We may have “ringing” effect on the “slow” anode signal
 - May cause the fast/slow ratio of X-ray events to be off, when following close after particle event



Under-estimated dead time?

- During Sco X-1 observations increase in number of SW triggers and accepted events show a 0.7 correlation
- Does this mean that we loose 30% of good X-rays?
- And why are they lost?
 - “Pile-up”?
 - Too strict selection criteria?
 - Recent Crab exercises may help find an answer

