Technical University of Denmark

JEM-X Status, June 2008

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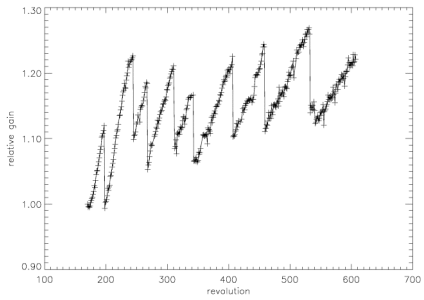
Gain evolution

- JEM-X1 DV setting was lowered in orbit 533 to DV=73, and most recent lowering to DV=72 took place in orbit 623
- Next lowering expected by end of 2008



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Anode status

- ~So far – on average 2-3% loss per year
- However, no loss for the past 10 months!!
- JEM-X1 (~500 orbits of use)
  - 54 of 256 anodes affected
    - 32 dead (4 pre-launch)
    - 14 neighbor
    - 11 unstable or low
- JEM-X2 (~175 orbits of use)
  - 49 of 256 anodes affected
    - 31 dead (9 pre-launch)
    - 15 neighbor
    - 3 unstable or low

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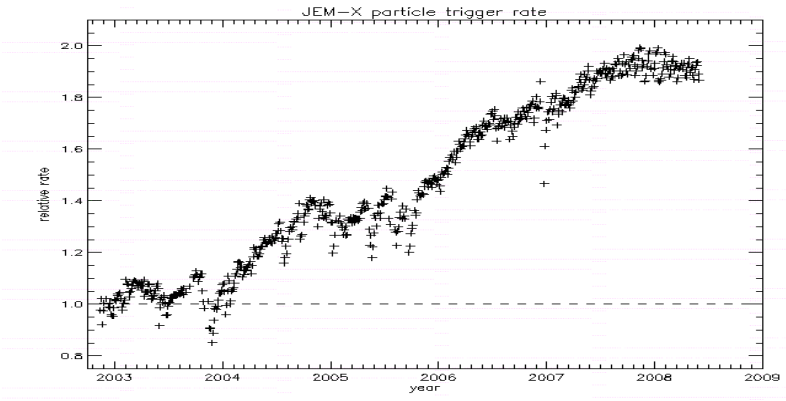
JEM-X particle trigger rate

- Maximum passed in late 2007
  - But no serious decline yet
  - (Note that this is **not** the background rate in JEM-X science data)



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JEM-X issues

- Electronic efficiency as function of gain is understood and measured
  - Full implementation in OSA is planned with the new version of j_ima_iros now under test
  - New OSA release is in the planning, when testing is completed, schedule to be coordinated with ISDC
- Calibration: Source detection limit is determined by systematics (detailed model of collimator)

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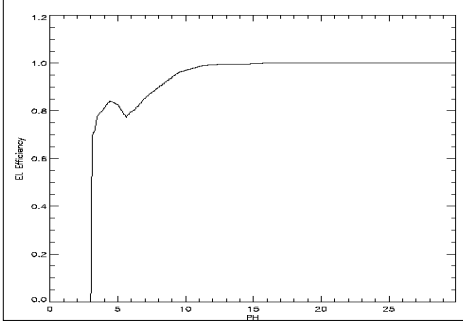
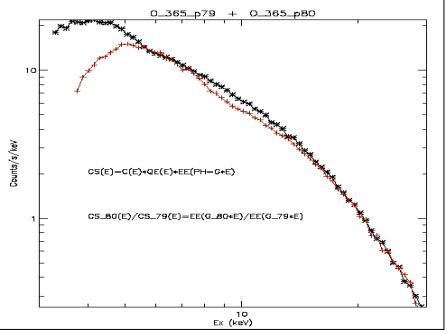
JEM-X electronic efficiency

- Electronic efficiency is function of PHA, not energy
- Crab count spectrum for two very different gain settings
  - Black – nominal
  - Red – 0.5 x nominal





Conclusion

- JEM-X is running smoothly
- Gain evolution is progressing (as expected)
  - Increased temperature sensitivity should be handled by the proper SW (gain fitting + j_ima_iros)
- Switch from JEM-X1 to JEM-X2 may be considered to even the “wear” on the detectors
- New version of imaging software under test and will be integrated into OSA

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