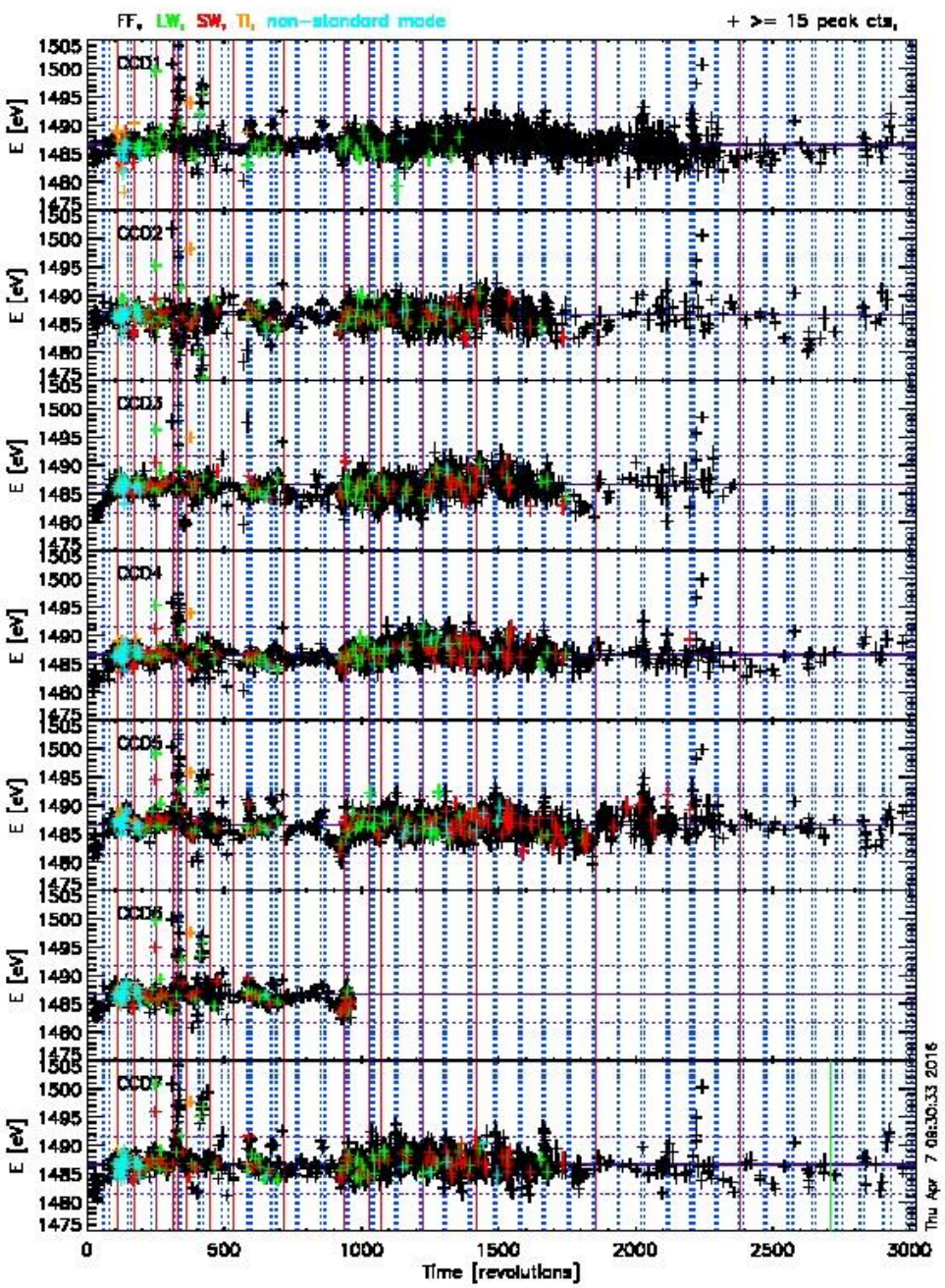
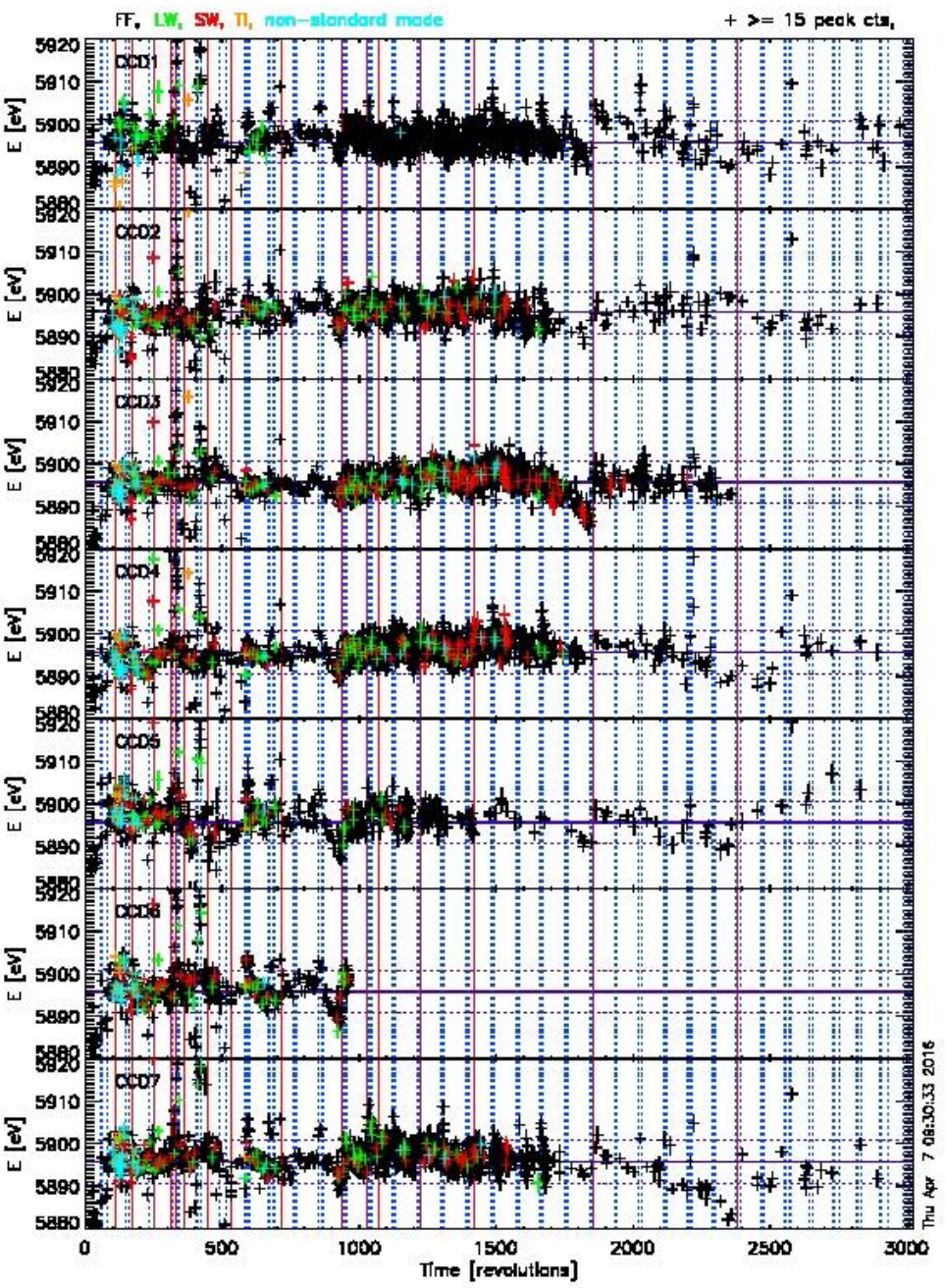
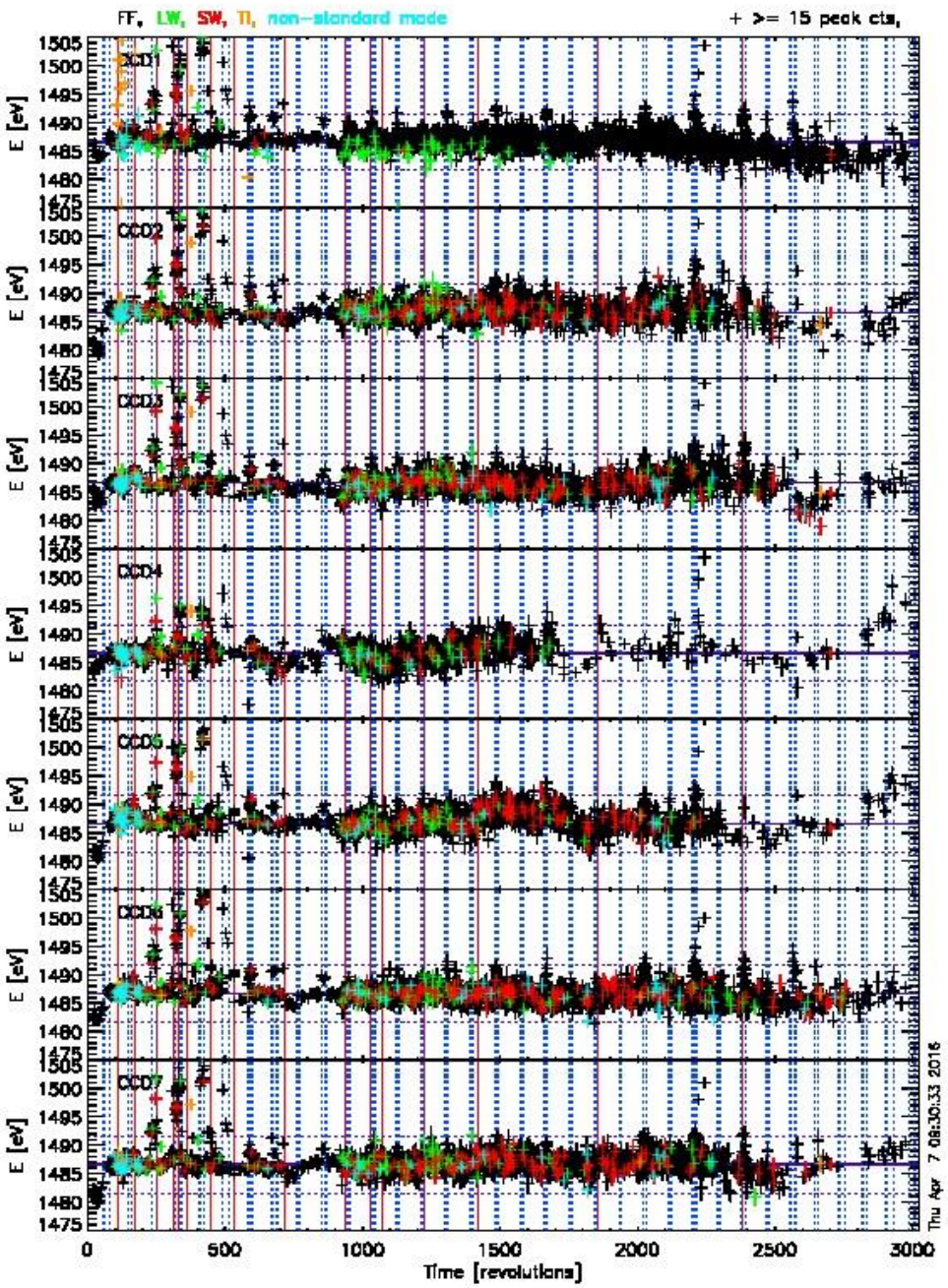
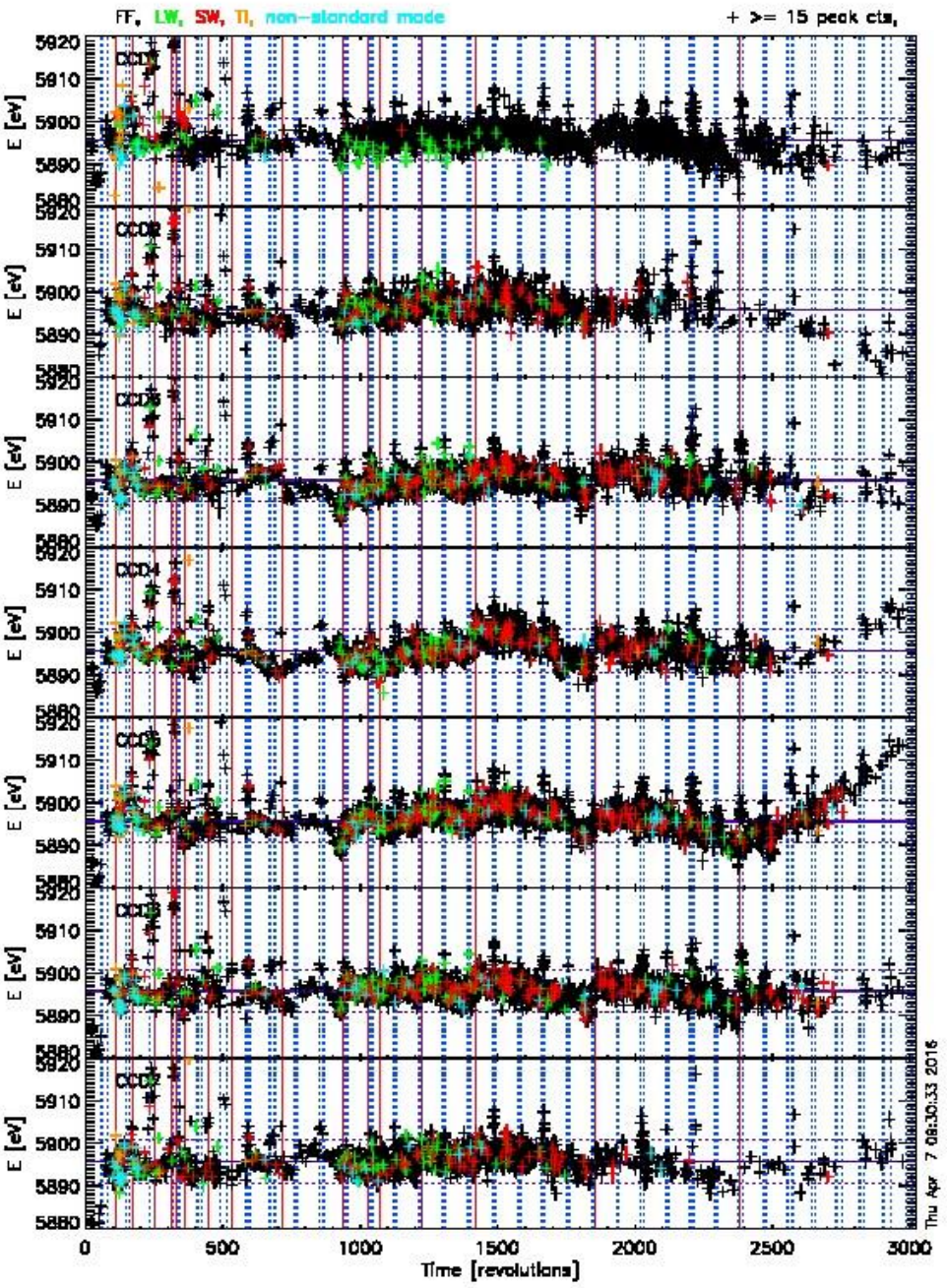
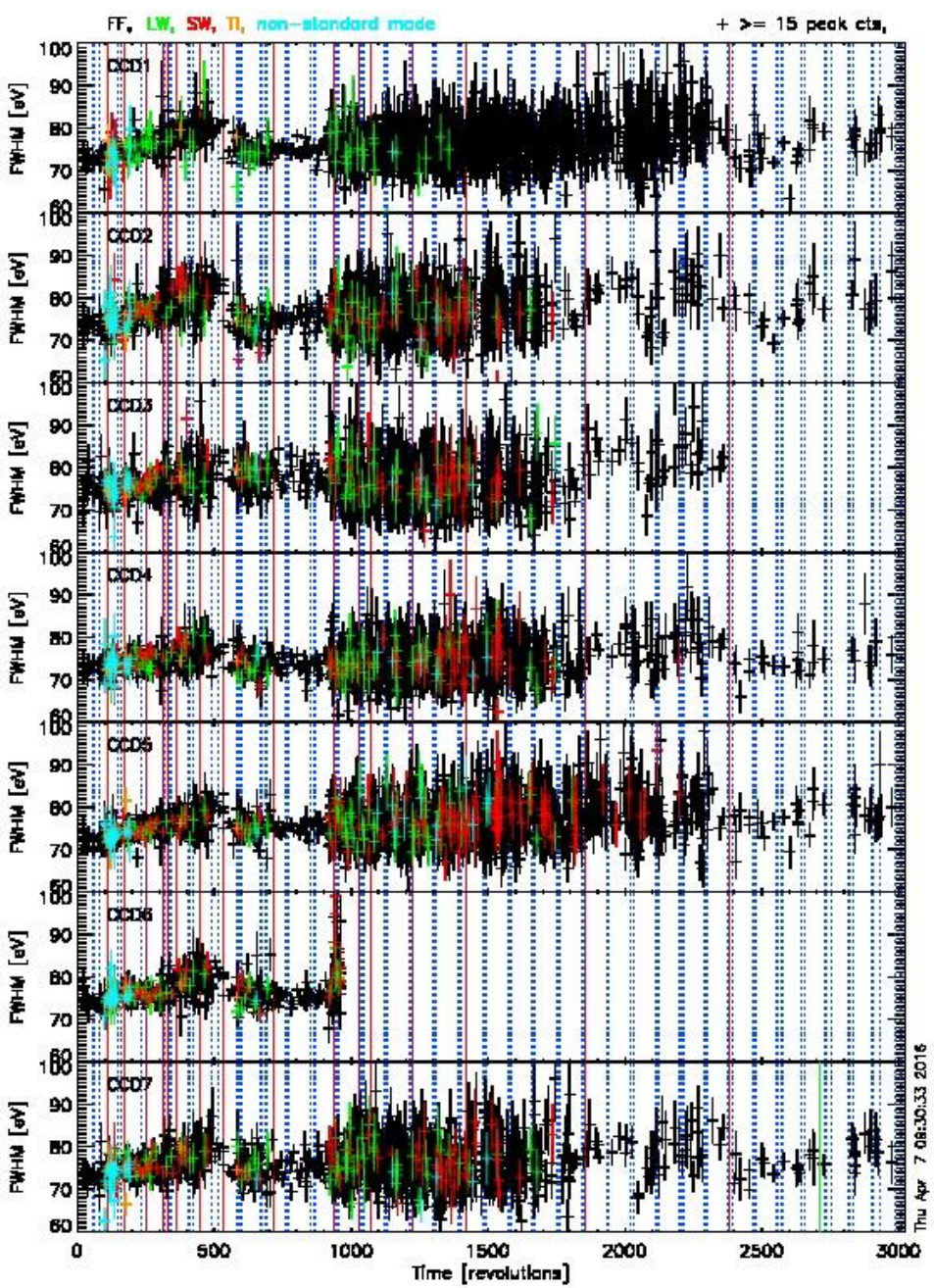
MOS LINE MONITORING

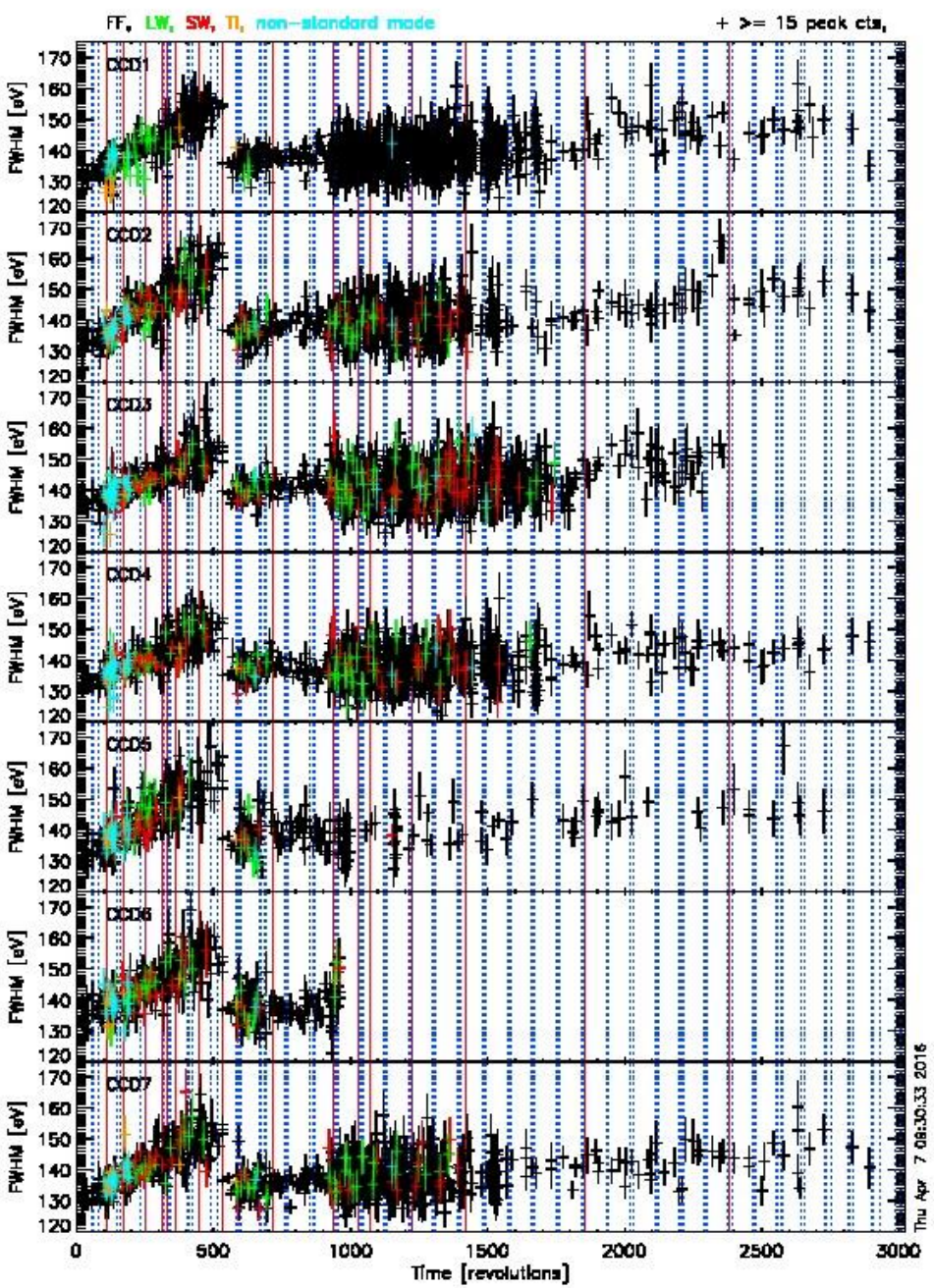

MOS1 Al-K PATTERN==0
FF, LW, SW, Tl, non-standard mode
+ >= 15 peak cts,
CCD1
CCD2
CCD3
CCD4
CCD5
CCD6
CCD7
E [eV]
Time [revolutions]
Thu Apr 7 08:30:33 2016

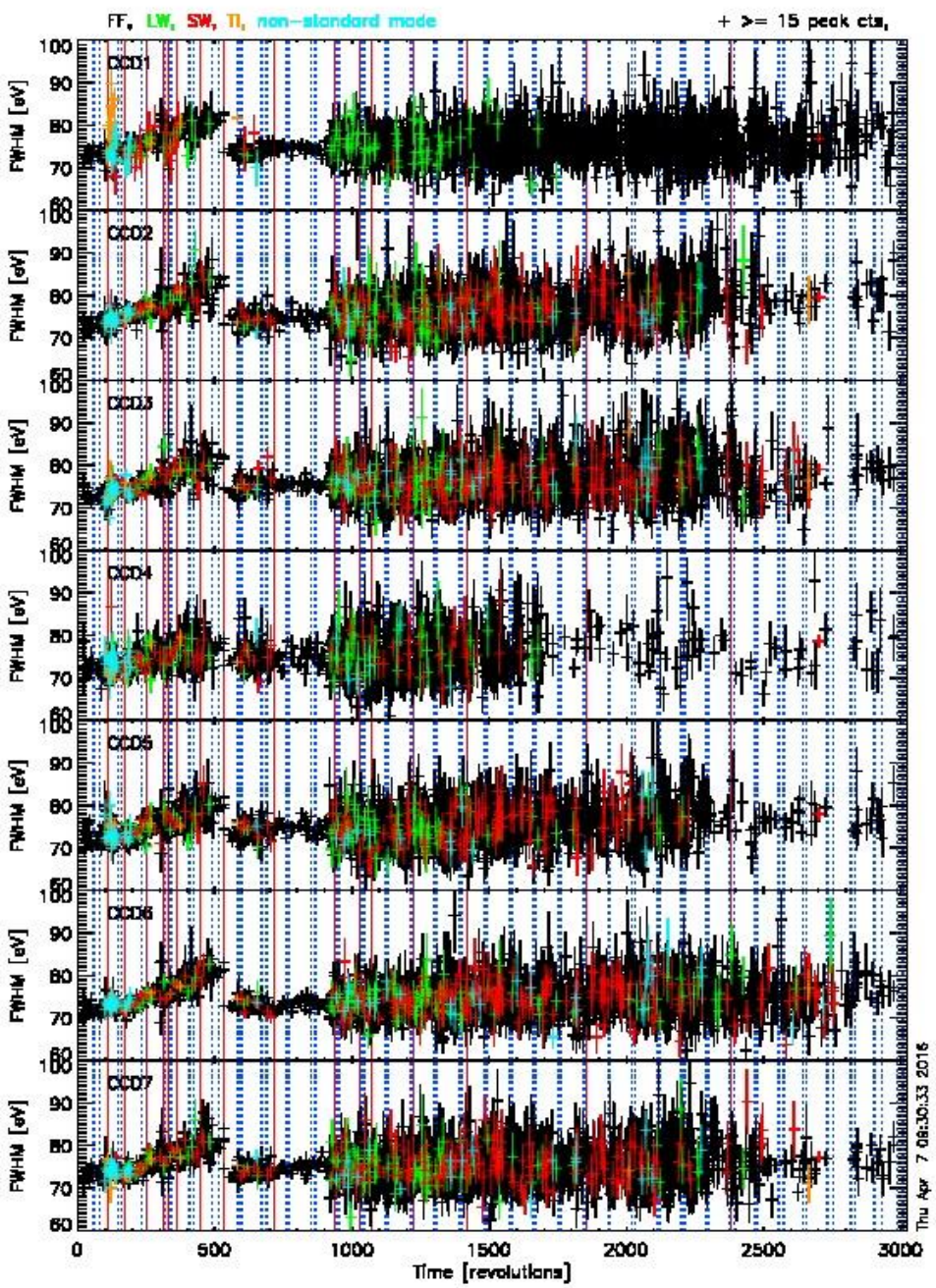

MOS1 Mn-K PATTERN in [0:12]
FF, LW, SW, Tl, non-standard mode
+ >= 15 peak cts,
CCD1
CCD2
CCD3
CCD4
CCD5
CCD6
CCD7
E [eV]
Time [revolutions]
Thu Apr 7 08:30:33 2016

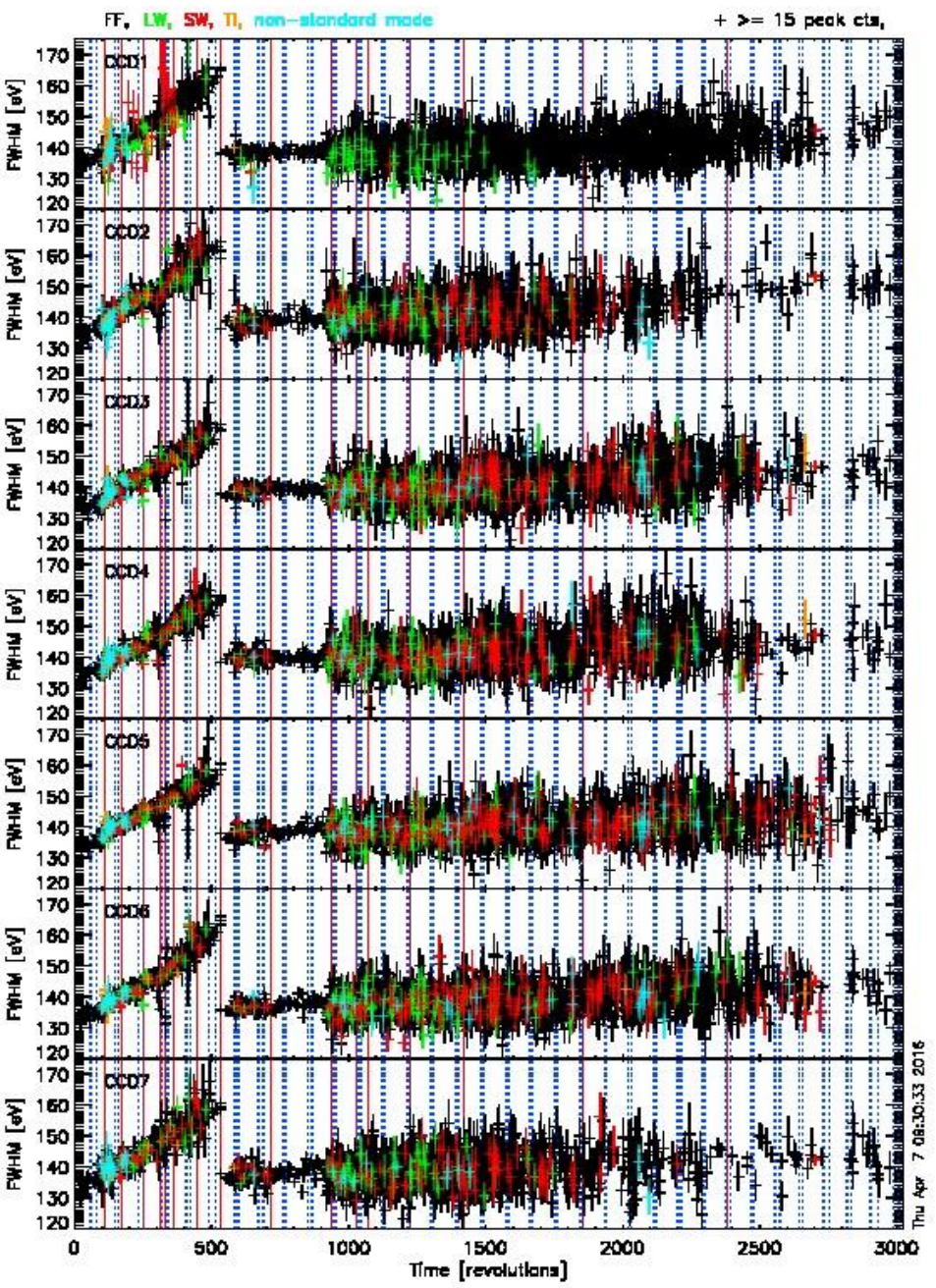

MOS2 Al-K PATTERN==0
FF, LW, SW, TI, non-standard mode
+ >= 15 peak cts,
CCD1
CCD2
CCD3
CCD4
CCD5
CCD6
CCD7
E [eV]
Time [revolutions]
Thu Apr 7 08:30:33 2016


MOS2 Mn-K PATTERN in [0:12]
FF, LW, SW, TI, non-standard mode
+ >= 15 peak cts,
CCD1
CCD2
CCD3
CCD4
CCD5
CCD6
CCD7
E [eV]
Time [revolutions]
Thu Apr 7 08:30:33 2016

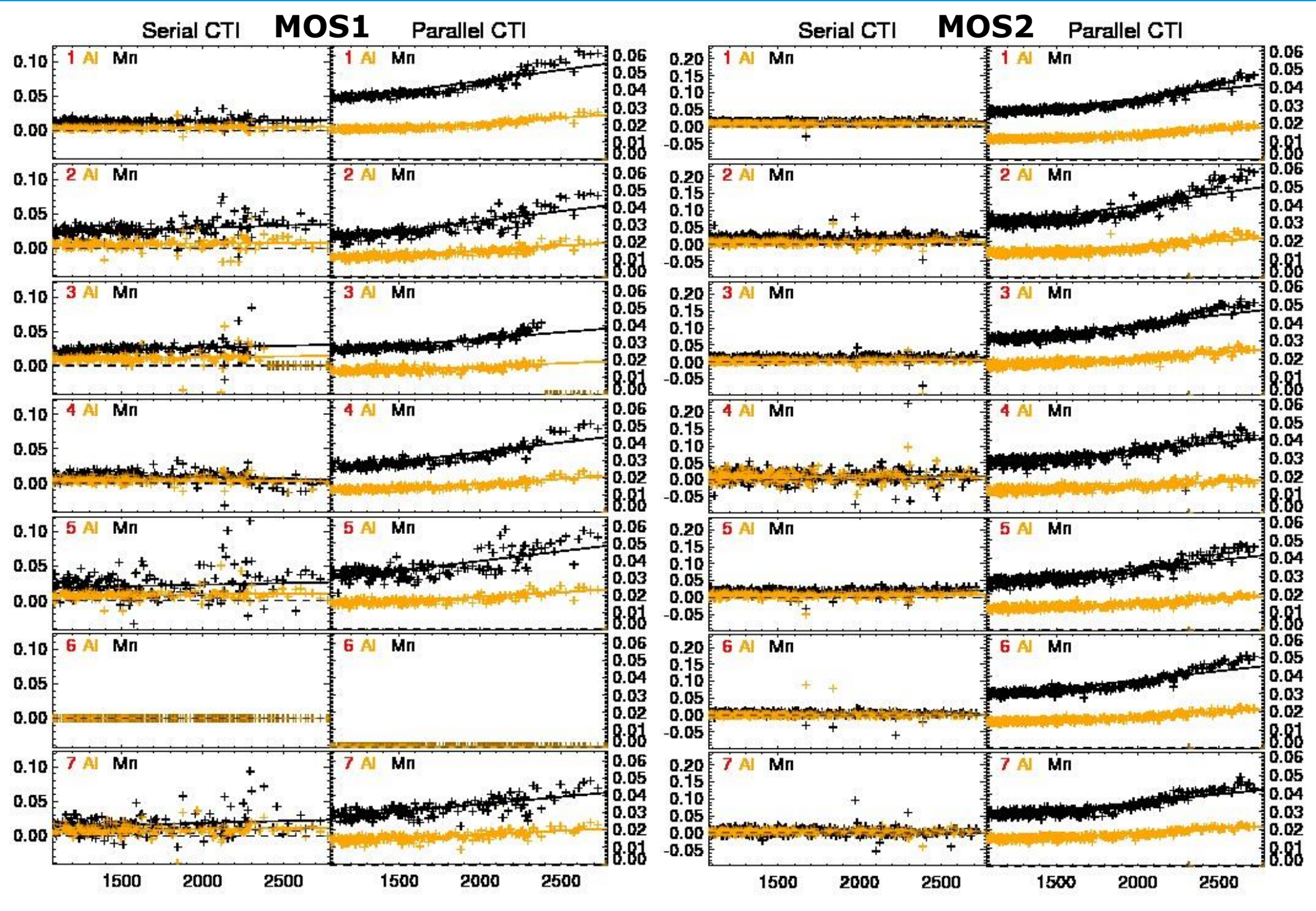

MOS1 Al-K PATTERN==0
FF, LW, SW, Tl, non-standard mode
+ >= 15 peak cts,
CCD1
CCD2
CCD3
CCD4
CCD5
CCD6
CCD7
FWHM [eV]
Time [revolutions]
Thu Apr 7 08:30:33 2016


MOS1 Mn-K PATTERN==0
FF, LW, SW, Tl, non-standard mode
+ >= 15 peak cts,
CCD1
CCD2
CCD3
CCD4
CCD5
CCD6
CCD7
FWHM [eV]
Time [revolutions]
Thu Apr 7 08:30:33 2016


MOS2 Al−K PATTERN==0
FF, LW, SW, TI, non−standard mode
+ >= 15 peak cts,
CCD1
CCD2
CCD3
CCD4
CCD5
CCD6
CCD7
FWHM [eV]
Time [revolutions]
Thu Apr 7 08:30:33 2016


MOS2 Mn−K PATTERN in [0:12]
FF, LW, SW, TI, non−standard mode
+ >= 15 peak cts,
CCD1
CCD2
CCD3
CCD4
CCD5
CCD6
CCD7
FWHM [eV]
Time [revolutions]
Thu Apr 7 08:30:33 2016

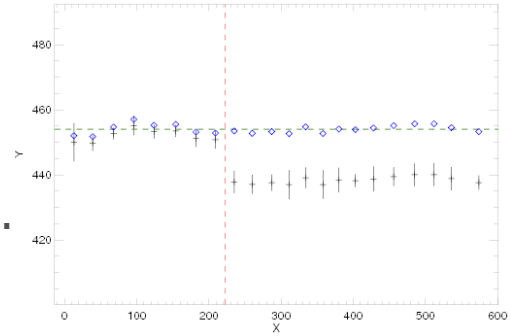
MOS CTI/GAIN MONITORING


Serial CTI
MOS1
Parallel CTI
Serial CTI
MOS2
Parallel CTI
1 Al Mn
2 Al Mn
3 Al Mn
4 Al Mn
5 Al Mn
6 Al Mn
7 Al Mn
1500
2000
2500

Current status

- Latest CCF update for current epoch (after 2012-12-12) public since July 2014.

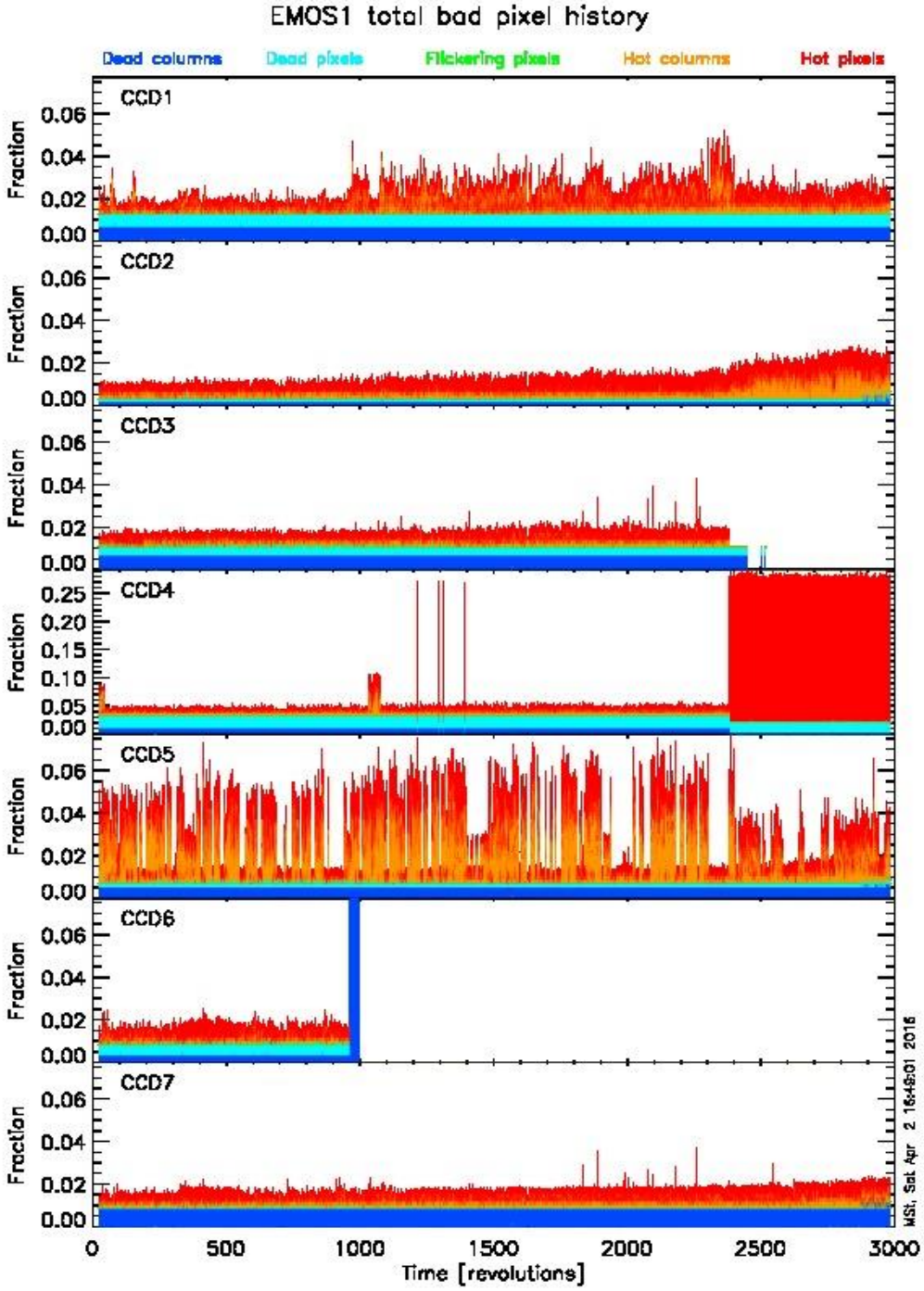
- Full update of all epochs using new Leicester EMOS package close to completion.
  - Motivation: Significant improvement in column traps correction.

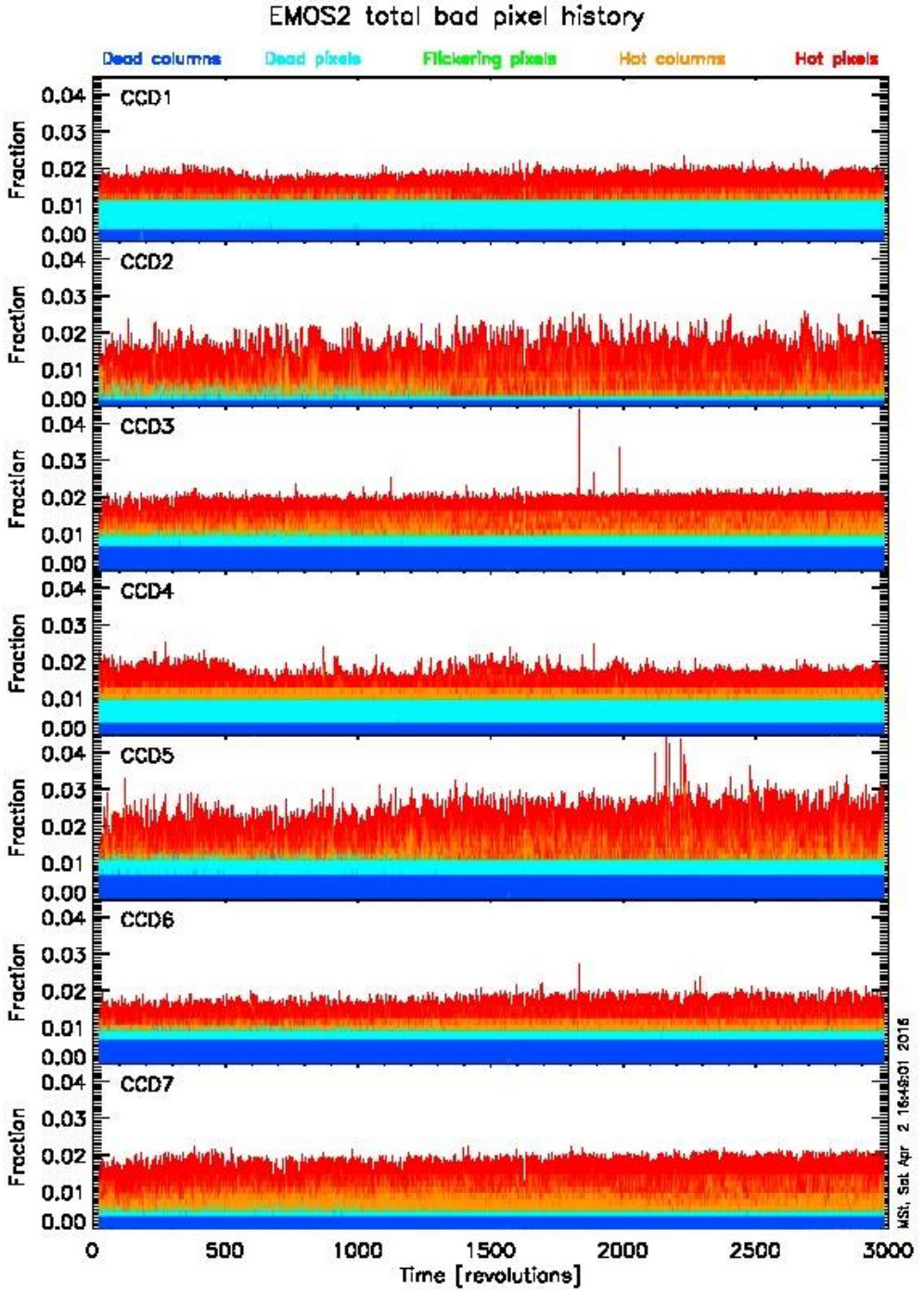


- Cause of delay:
  - Significant issues for individual epoch/CCD combinations. Origin unclear.
  - Some very short epochs: too short for proper column traps evaluation.
  - CTI curvature at Al and Mn are at different epochs and different for CCDs.

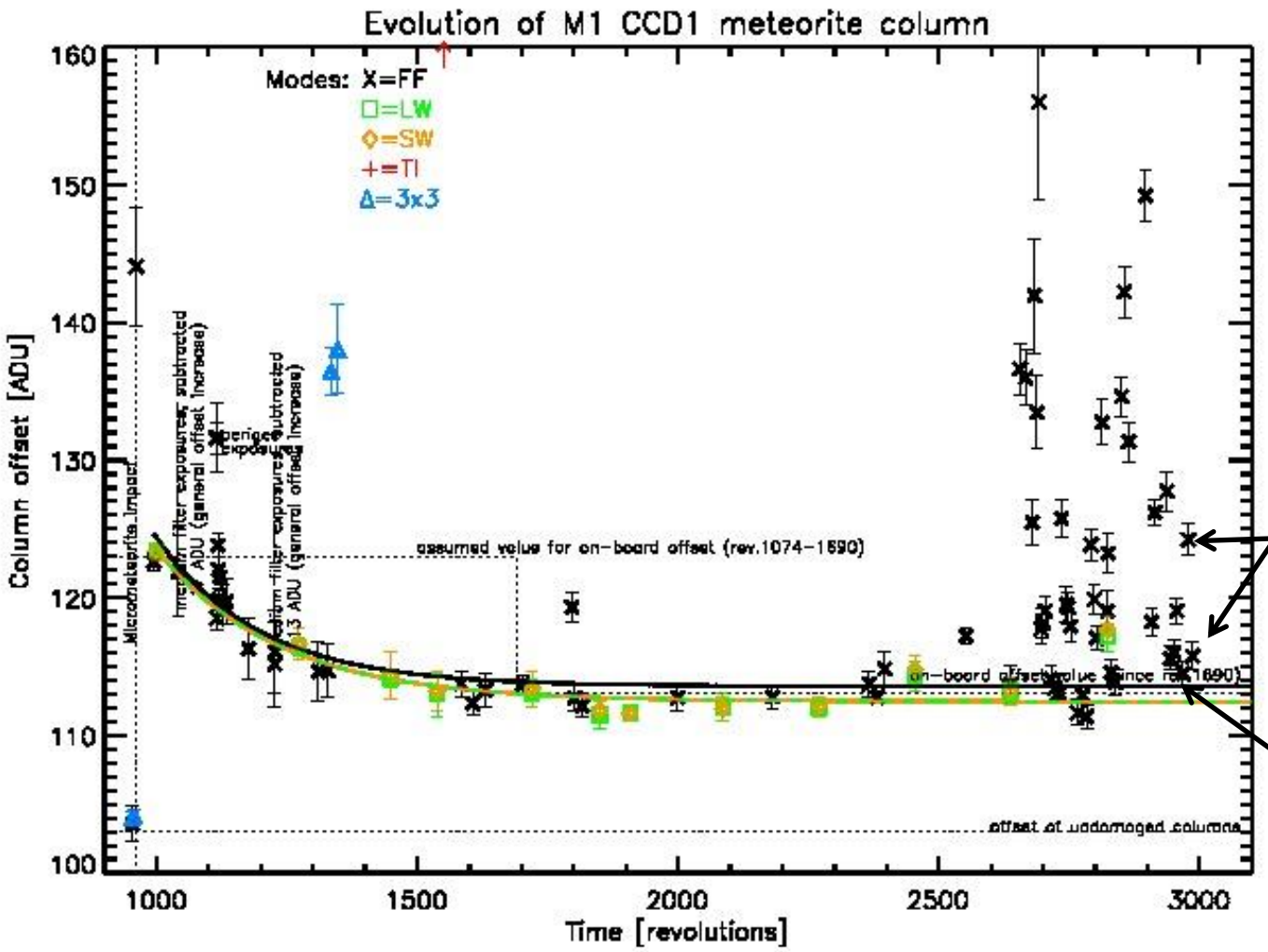
- New update will be finished before UG meeting 2016.

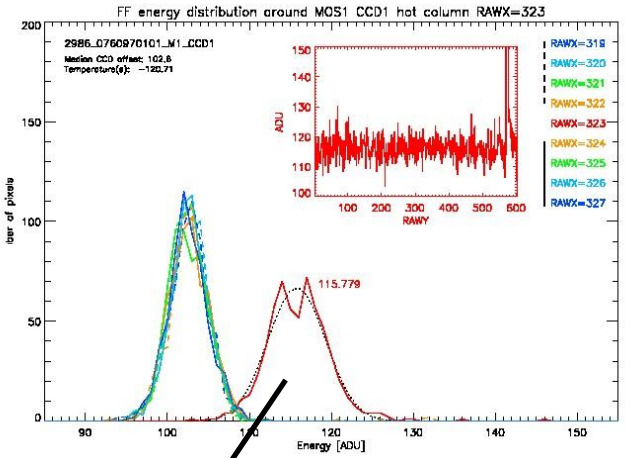
MOS BAD PIXEL (TABLE) MONITORING

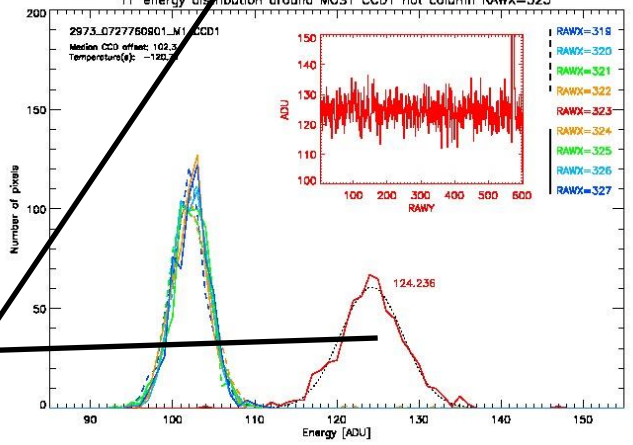

EMOS1 total bad pixel history
Dead columns
Dead pixels
Flickering pixels
Hot columns
Hot pixels
CCD1
CCD2
CCD3
CCD4
CCD5
CCD6
CCD7
Fraction
Time [revolutions]
0
500
1000
1500
2000
2500
3000
MSI, Sat Apr 2 16:48:01 2016

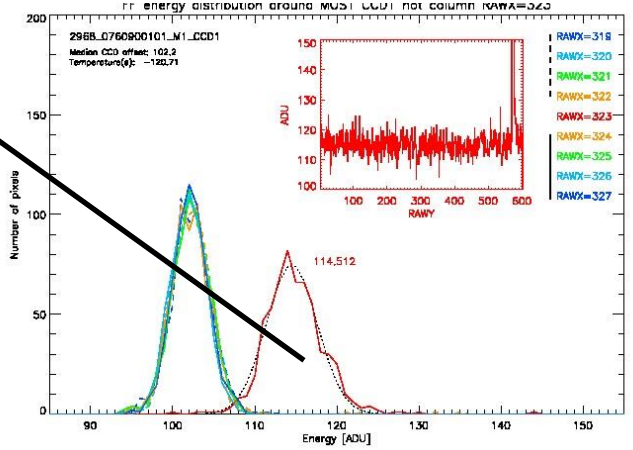

EMOS2 total bad pixel history
Dead columns
Dead pixels
Flickering pixels
Hot columns
Hot pixels
CCD1
CCD2
CCD3
CCD4
CCD5
CCD6
CCD7
Fraction
Time [revolutions]
0
500
1000
1500
2000
2500
3000
MSI, Sat Apr 2 16:48:01 2016

MOS1 CCD1 meteorite column monitoring



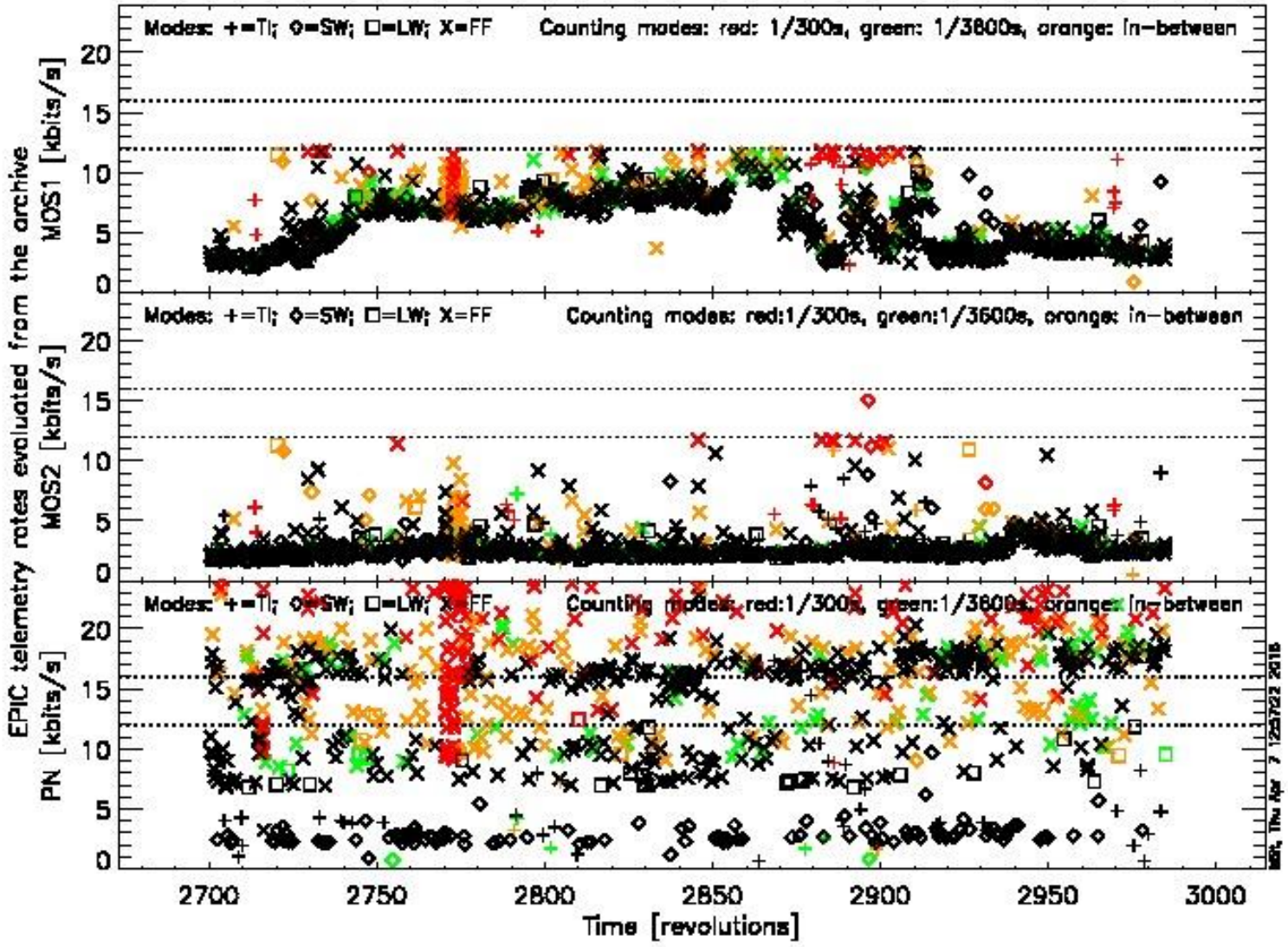






MOS TELEMETRY MONITORING

EPIC telemetry revs. 2400-2798



Red stripe rev. 2772: Mosaic mode with high radiation

MOS2 SW exposure in parallel to MOS1 diagnostic exposures (BRAT change)

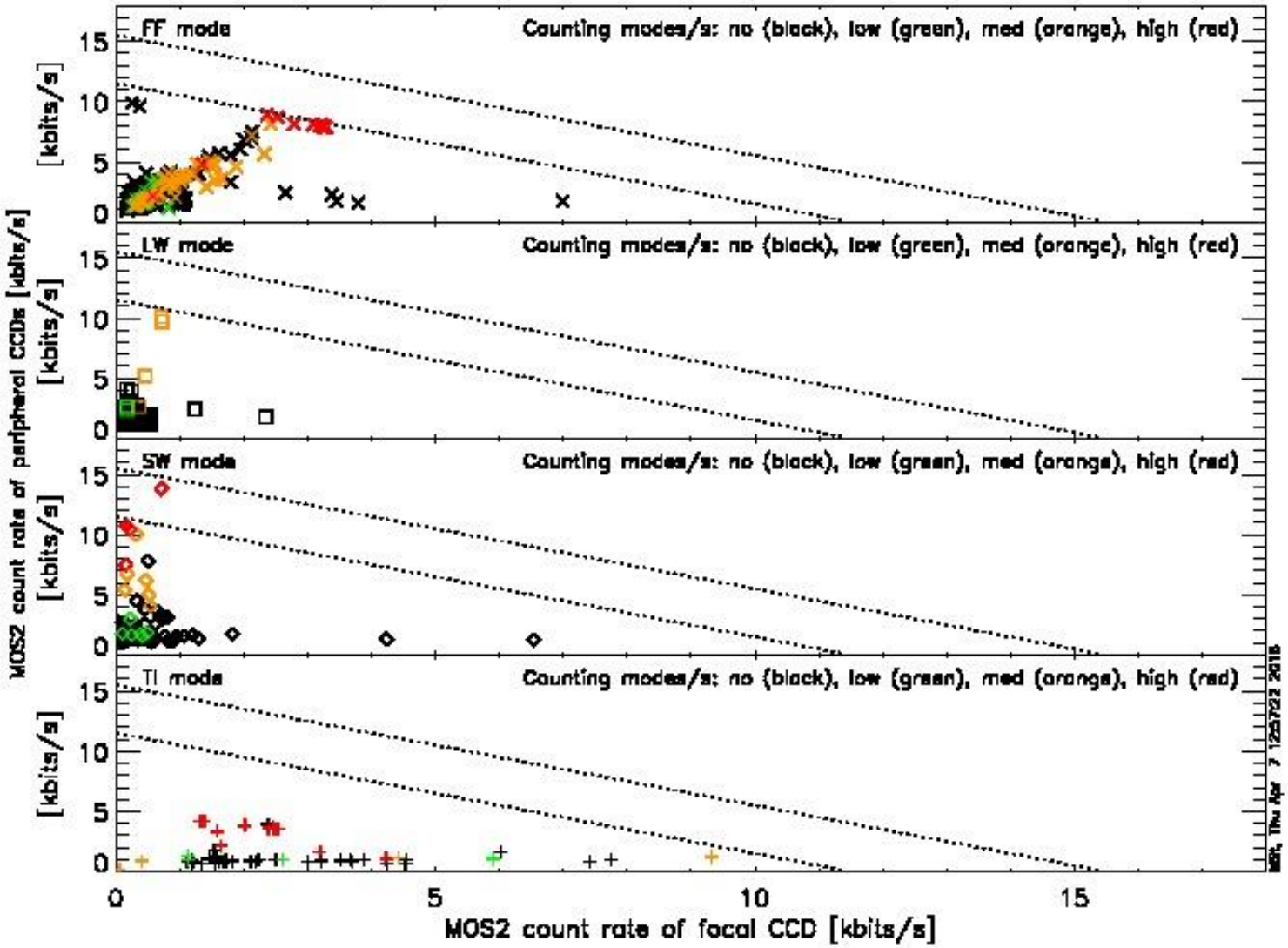
MOS2 telemetry

The good:

Source brightness along X-axis

Background activity levels as diagonal

Bright source in peripheral CCDs for points at low X and high Y



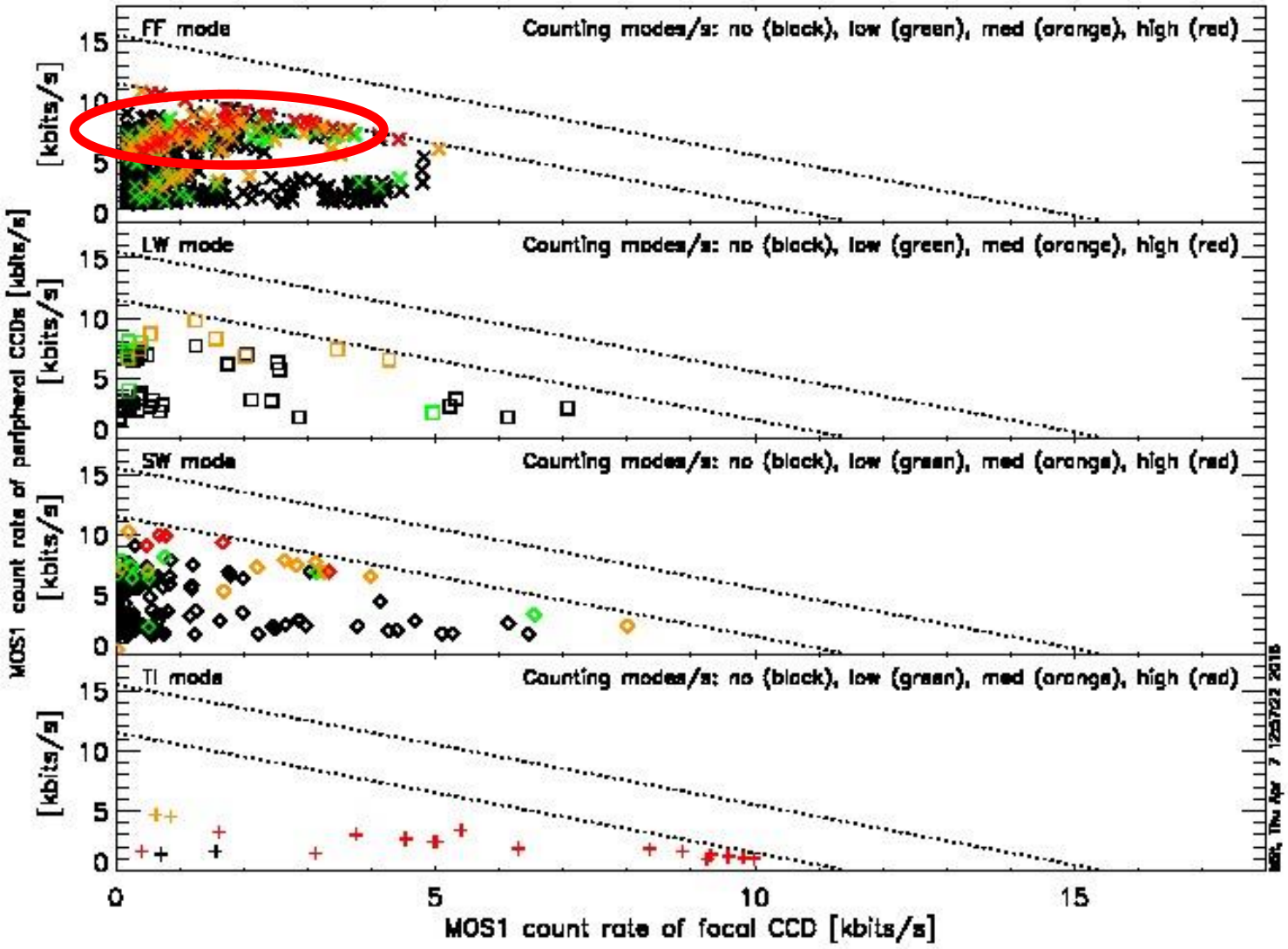
MOS1 telemetry

The ugly:

Noisy columns/pixel in peripheral CCDs

Mainly CCD2 RAWX=384+421 Meantime blanked in onboard offset table

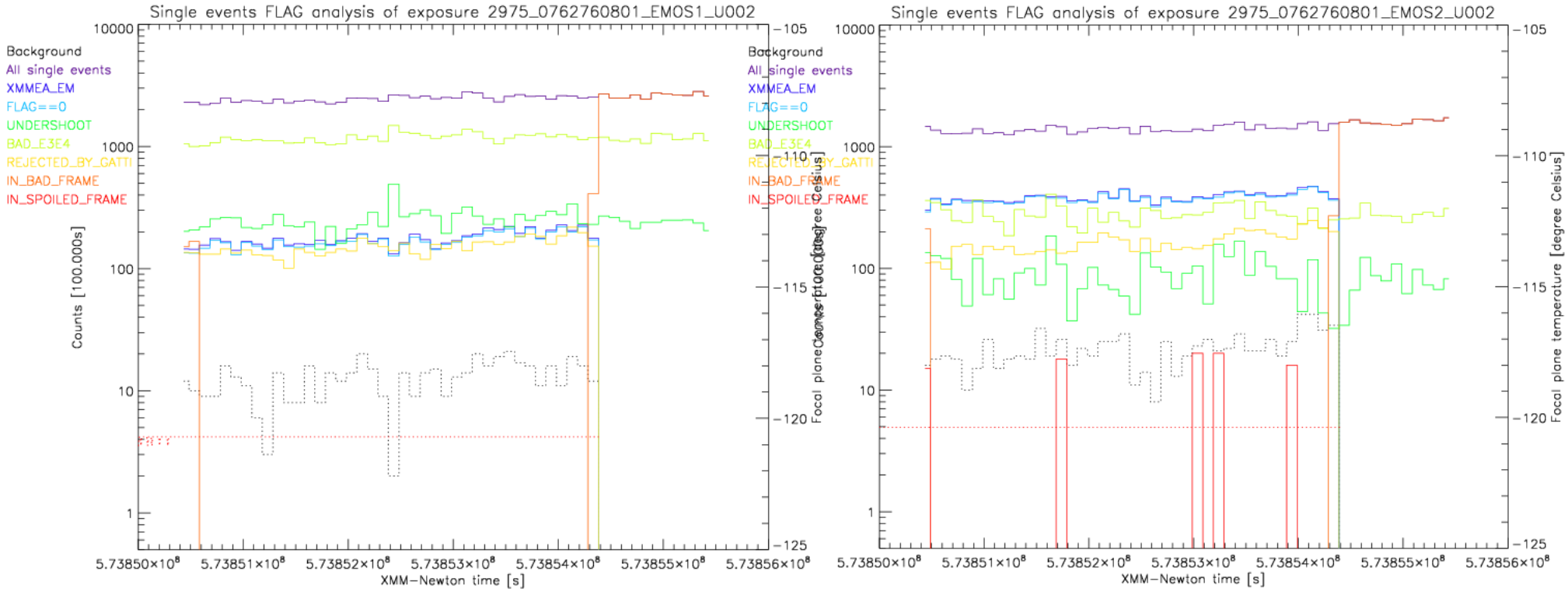
Activity of CCD1 meteorite column



MOS EVENT FLAG MONITORING

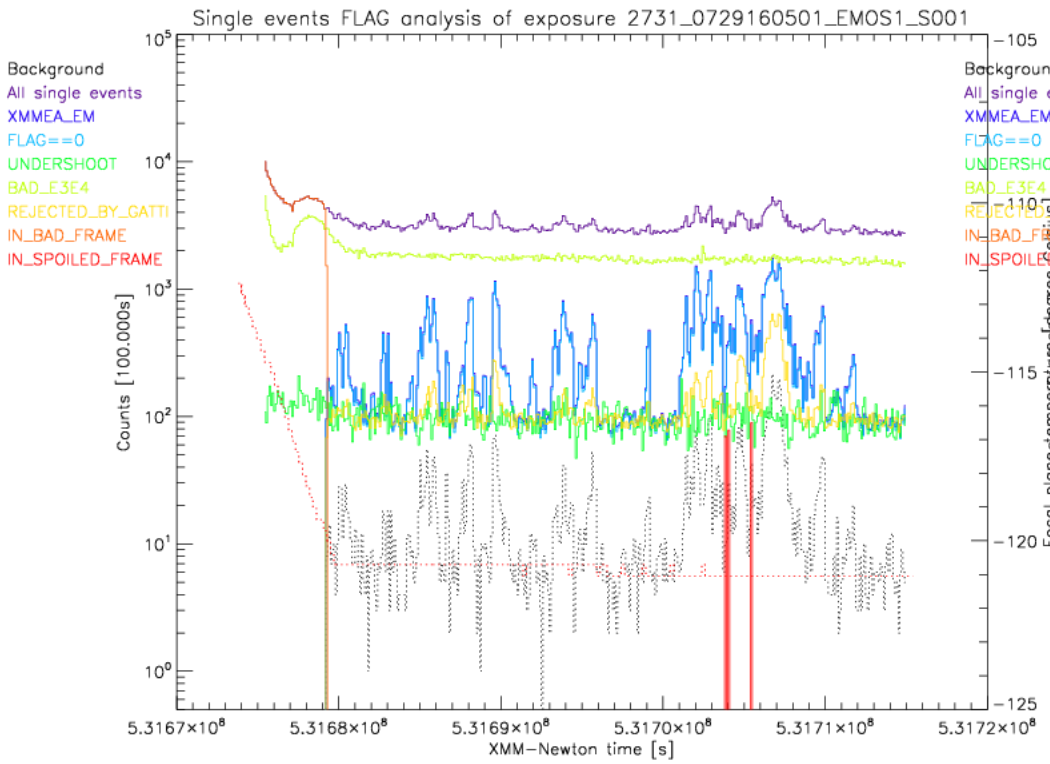
- Within long CalClosed exposures during strong solar flare periods (e.g. revs. 2221, 2242, 2464), suddenly all events are flagged as invalid.
- Happened with event flag IN_BAD_FRAME and always simultaneously for both MOS1 and MOS2.
- Systematic search for exposures with periods of no valid data.

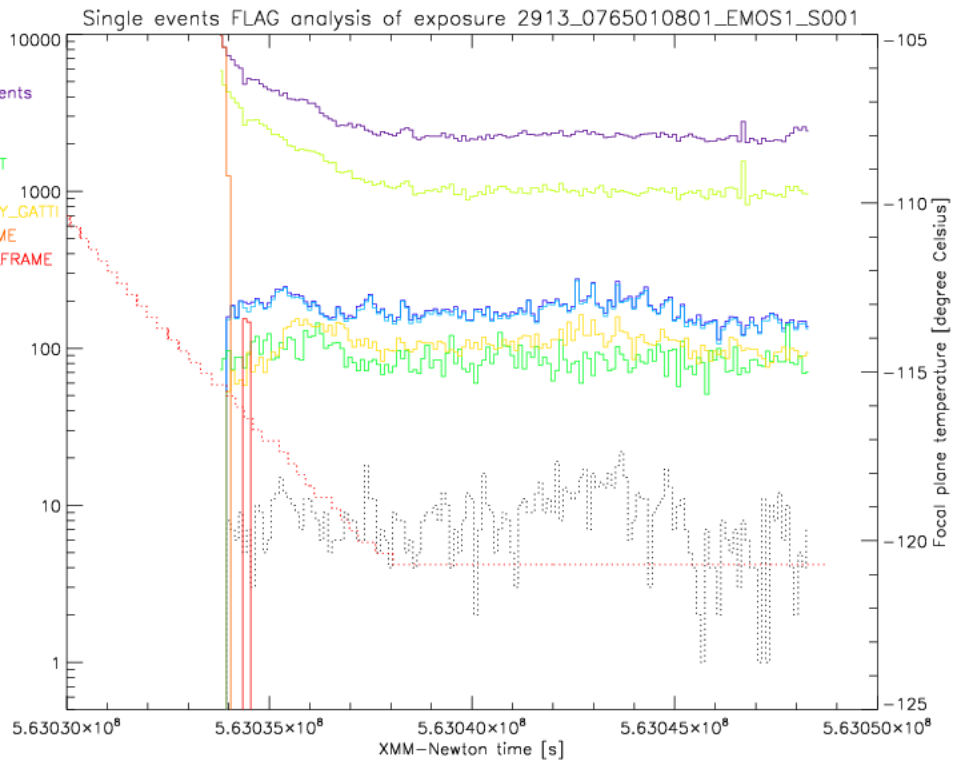
Examples: All events flagged as invalid.



- Due to loss or end of housekeeping (PEH) telemetry.
  - 27 exposures from rev. 2000-2984
- High number of MOS1 BAD_E3E4 events origin from CCD noise (hot columns, CCD4).

Examples: All events flagged as invalid.

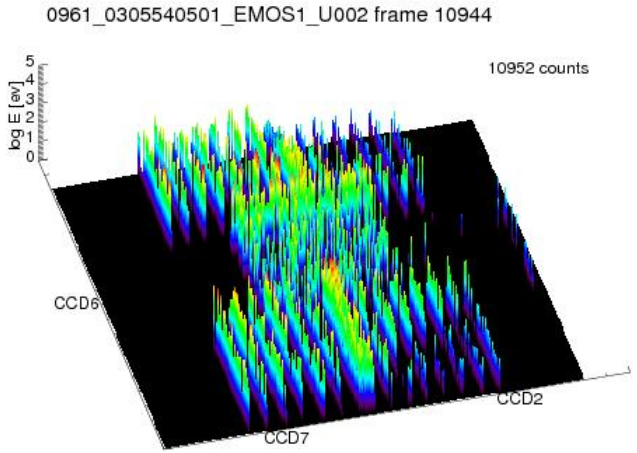


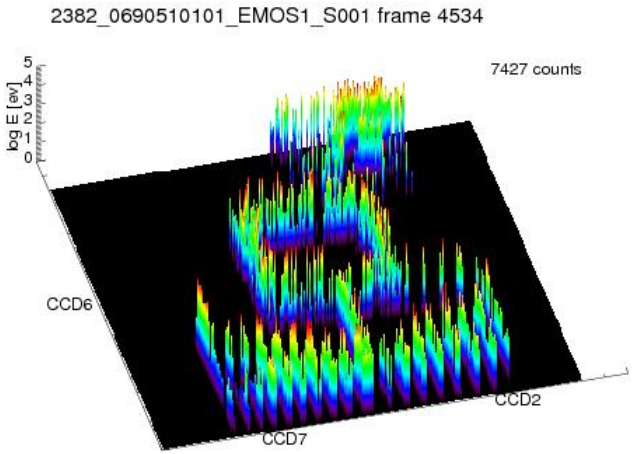


- Due to exceeding focal plane temperature tolerance range.
  - 10 exposures in rev. 2731-2753 winter eclipse season.
  - 2 exposures in rev. 2903-2931 winter eclipse season.

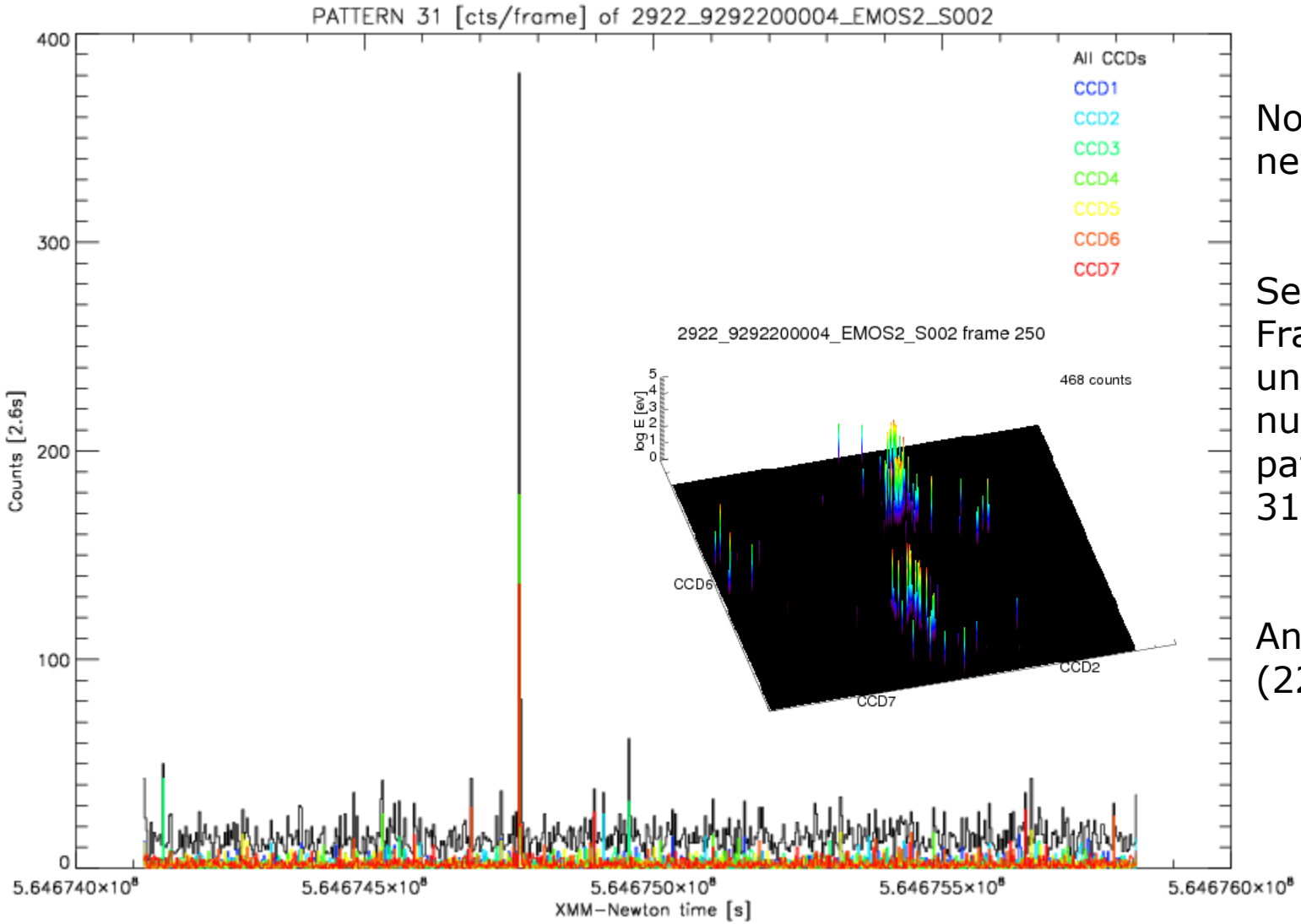
MOS FLASH MONITORING

(Search for meteorite impacts)





MOS flash monitoring: triggered event



No news are good news!

Search trigger:
Frame(s) with unusual high number of counts of pattern
31 events

Anomaly in MOS2 (22.11.2015)

MOS2CCD5 effect monitoring

- Monitoring based on out-FOV count rate analyses.
- Just MOS2 available, because for MOS1 only 3 peripheral CCDs with out-FOV areas left.
- Change to Leicester method will check full CCD and also include central CCD.