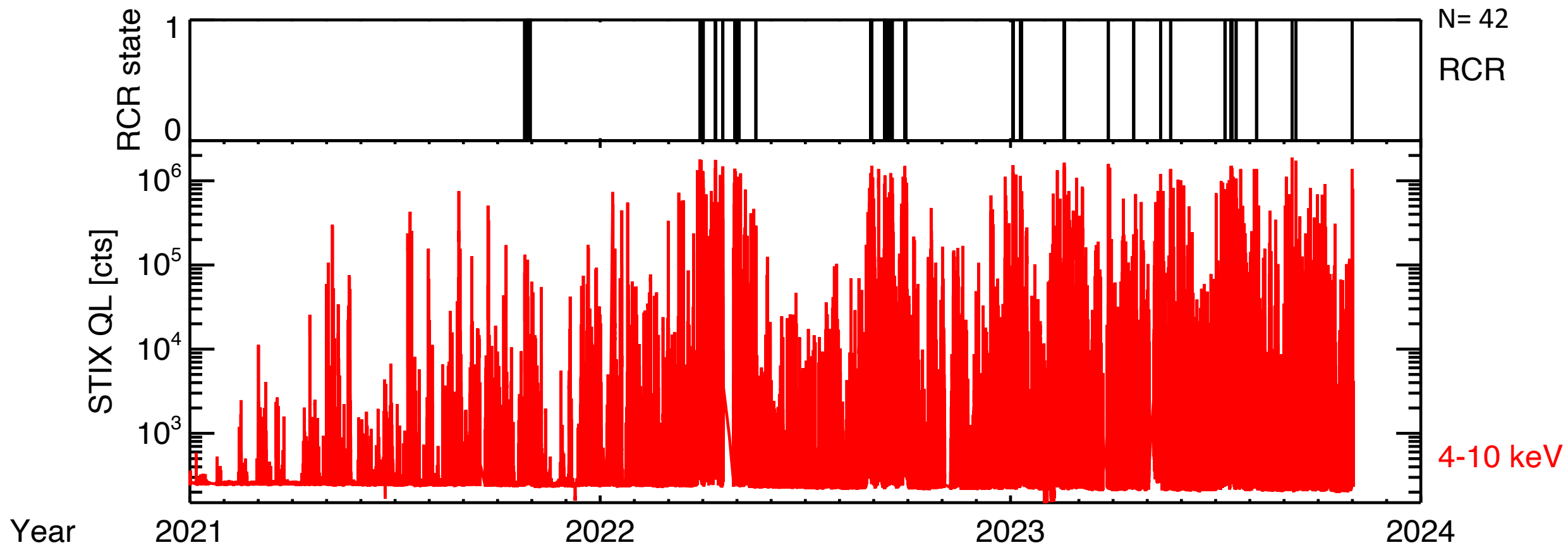


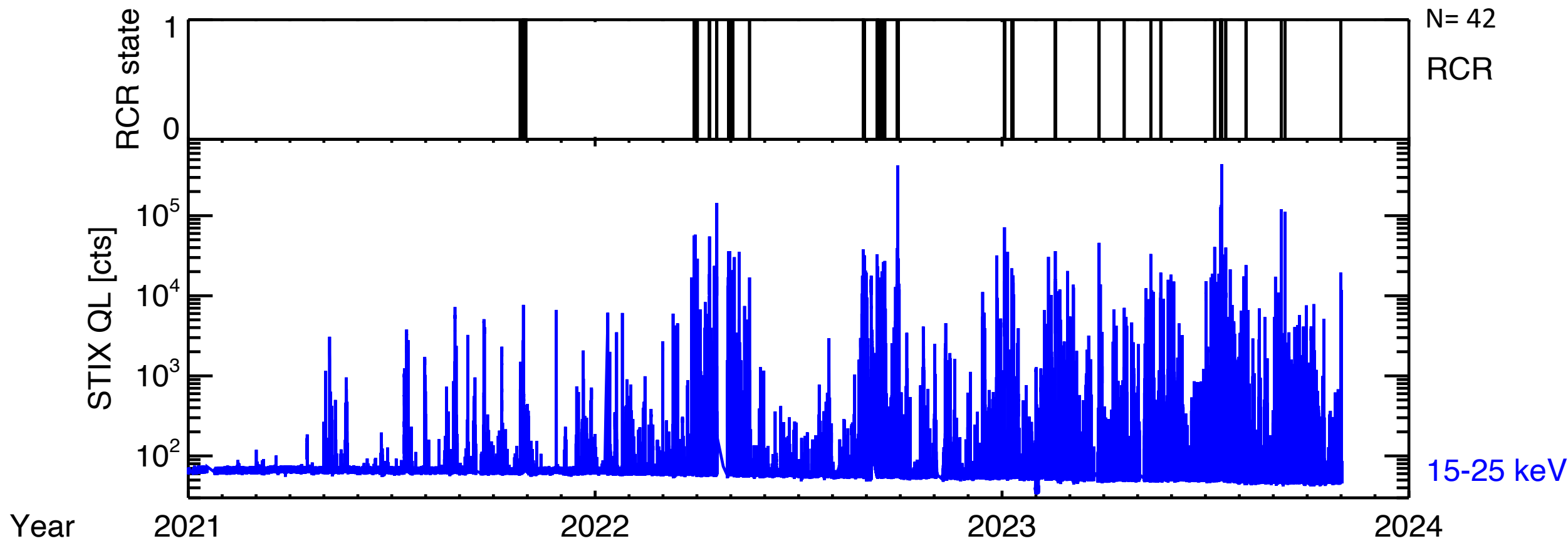
STIX update

Team meeting Nov 5, 2023



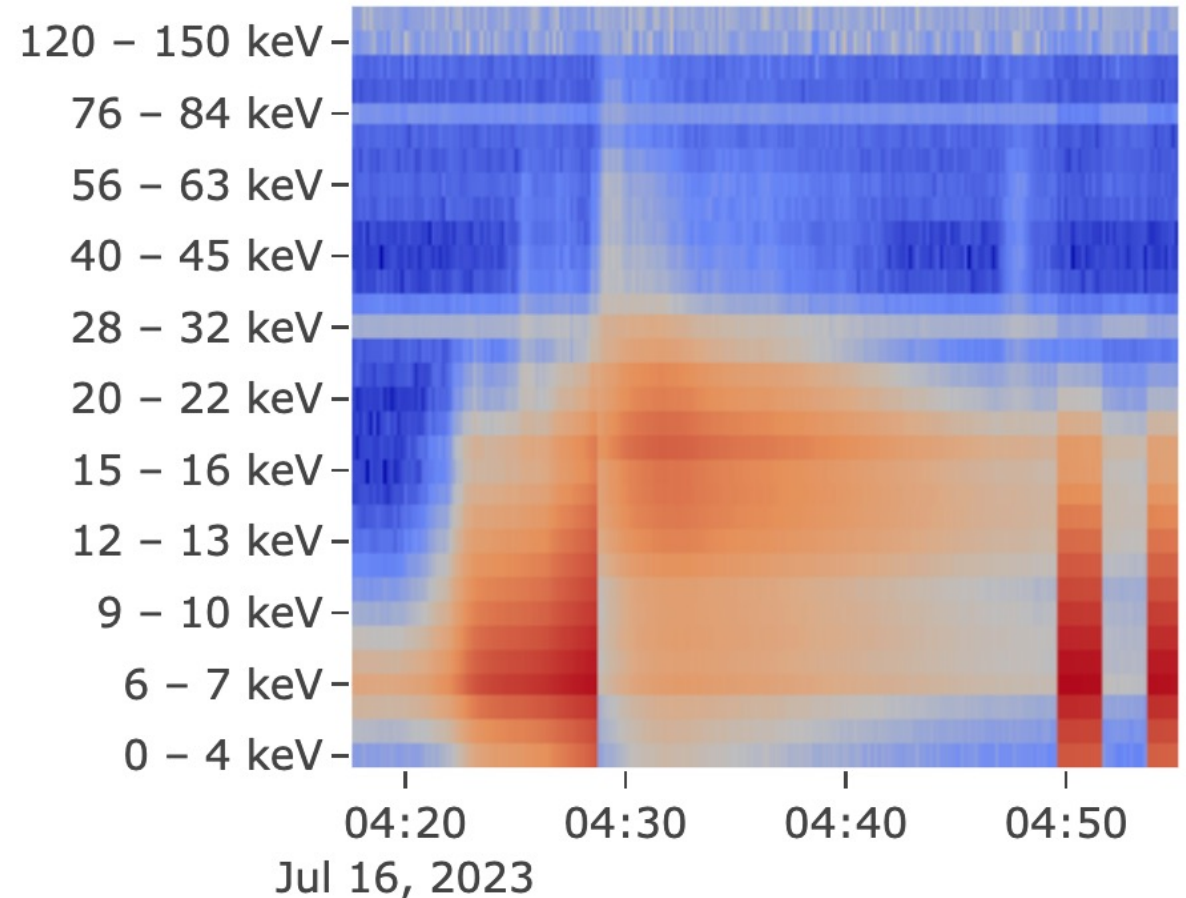
STIX update

Team meeting Nov 5, 2023



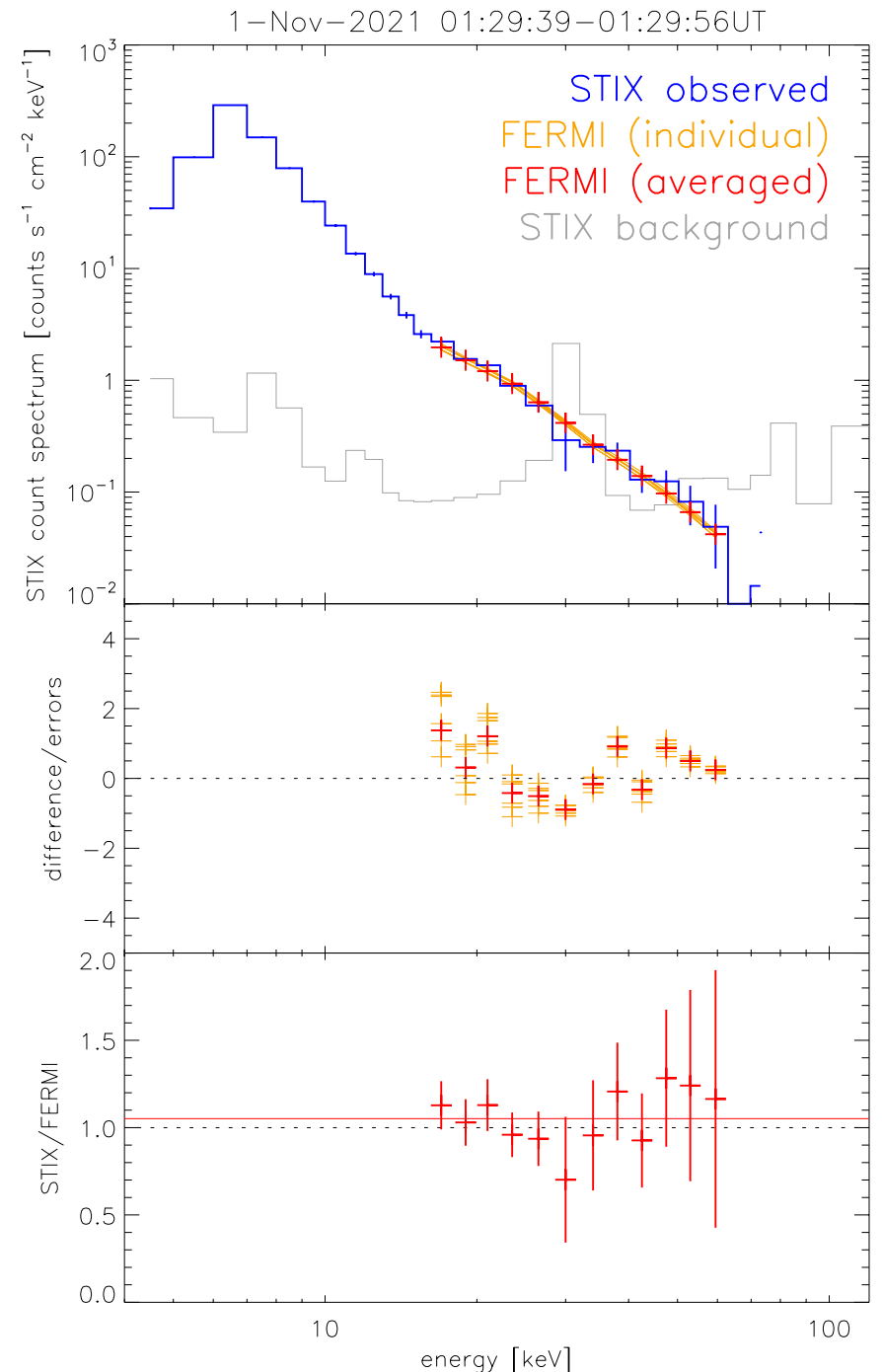
STIX operation update

- Mainly nominal operation
- ICOMP setting changed:
 - ‘bumps’ now above 120 keV
- Run in fine energy binning mode for 3 months
- Upcoming:
 - 0.3 s time resolution run
 - EUI will use STIX onboard flare trigger
- Trigger scaling
- Telemetry is currently high (~190M/week)
- 40'000 flares observed so far



Calibration status

- Current calibration is satisfactory for many science topics
- Fine tuning in progress
 - Absolute flux calibration with CFL
 - semi-transparent fuzzy grids
 - Livetime → Olivier's presentation
 - Subcollimators 1+2: preliminary version
 - Geant4 simulation of DRM
 - Aspect → Frederic's presentation
 - BKG detector → Muriel's presentation
- need more person power
 - Coarse Flare Locator



STIX imaging

- Imaging concept paper (Massa et al. 2023)
- Imaging algorithms are stable
- Bug in vis computation has been fixed (in SSWIDL v0.5.0)
- New algorithms in preparation
 - Electron visibilities → Anna's talk
 - Automated and multi-scale CLEAN → Michele's talk

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RESEARCH



The STIX Imaging Concept

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Abstract

We provide a mathematical description of the imaging concept of the *Spectrometer/Telescope for Imaging X-ray Disconnect* onboard *Solar Orbiter*. Specifically, we describe the STIX indirect-imaging technique, which is based on spatial modulation of the X-ray photon flux by means of tungsten grids, and we show that each of 30 STIX imaging sub-collimators measures a Fourier component of the flaring X-ray source corresponding to a specific two-dimensional angular frequency. We also provide details about the count-distribution model, which describes the relationship between the photon flux and the measured pixel counts. The derived imaging model is the fundamental starting point both for the interpretation of STIX data and for the description of the data-calibration process. Finally, we provide an overview of the algorithms implemented for the solution of the imaging problem and a comparison of the results obtained with these different methods in the case of the SOL2022-03-31T18 flaring event.

Software

- SSWIDL update → Ewan's talk
- Python update → Shane's talk

STIX Science

- Flares lists → Laura's talk
- ~36 papers (STIX in abstract on ads)
- ~30 presentations this week

