

STIX Normal Mode

Description

STIX has only 1 science acquisition mode, which is independent from solar activity, campaigns, etc.

Data acquisition operations onboard **do change** based on the incoming flux. The attenuator is automatically used during high solar activity to suppress the count rates, cadence can be changed too.

STIX **does** change the data processing and packaging onboard, based on solar activity and automatic event detection:

During non-flaring times: STIX FPGA accumulates background counts for energy calibration.

During flares:

- STIX may autonomously change attenuator and/or enable selective pixel suppression using predefined count rate criteria.
- STIX transmits flare flag message to s/c.
- In real time: STIX FPGA converts fine native A/D channels into detector-matched 'science energy channels'.
- In real time: data are accumulated as a function of science energy channel, pixel and time bins (0.1 second or larger depending on statistics).
- In background (using pre-parameterized algorithms or in response to TC): STIX selects and compresses data in archive memory into TM-ready packets in the 'to be transmitted' buffer.

When requested through TC: extra TM-ready packets can be selected and transferred to the SSMM for downlink.

EPS observation:

STX_NORMAL with parameter DATARATE = 600 [bits/sec]