

Background of Recent Telemetry Saturation

- After the restart of the **XISO** on **2015/03/11** (XISO was powered off to support some HXD observations in a limited battery condition prior to this), the charge leakage area increased.
- Before the date, the leakage area was only found in seg A, and we masked the area to suppress the unnecessary telemetry.
- After the date, the leakage area expanded in seg A, and also to the other three segments. It is most noticeable in the lines before and after the charge-injected lines (the charge-injected lines themselves are discarded onboard).
- We speculate that the charge leakage of the seg A has expanded to the serial register for the charge injection, and the amount of the injected charges went out of control in all the segments.
- Because of this, **the telemetry is saturated in a significant fraction of the observation times**. It is also conceivable that the CTI has changed by the increased amount of injected charges.
- In a frame dump image on **2015-04-08**, we found some areas of the **XIS3** are contaminated by leaked charges.

If you are analyzing the data obtained after 2015/03/11, please reject telemetry saturation periods following the recipe provided below.

A Recipe to Reject Telemetry-Saturation Periods

1) Generating a GTI filter file.

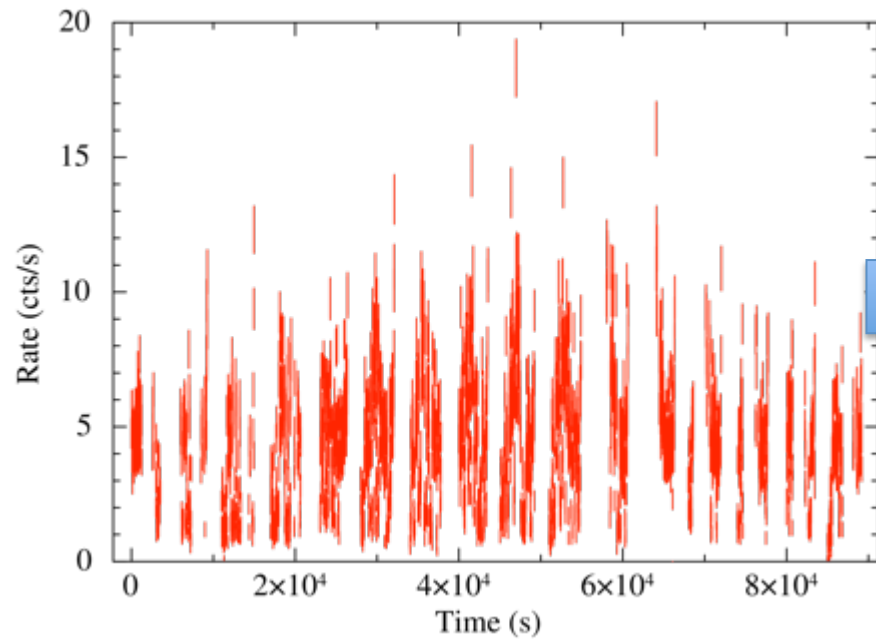
```
>set xis0_hk = ae***xi0_0.hk  
>fdump ${xis0_hk}+1 clobber=yes prhead=no showcol=no showrow=no  
showunit=no pagewidth=256 tlm.txt "S_TIME S0_TLM_OVF" -  
>./mk_gti.pl tlm.txt > gti_tlm.txt
```

2) Rejecting the saturated periods on XSELECT

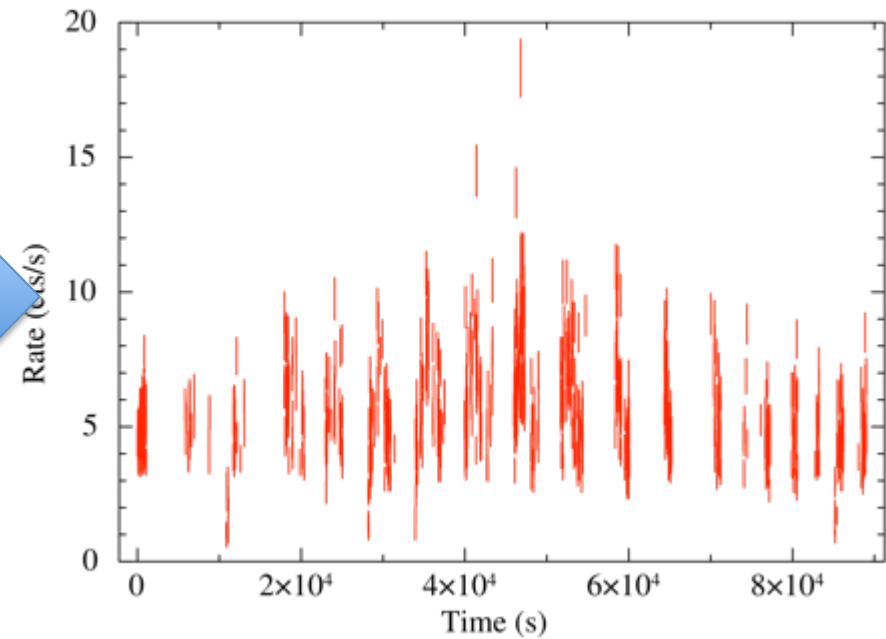
```
>xselect  
xsel:SUZAKU>filter time file gti_tlm.txt
```

Application to W49B: XIS0 Light Curves

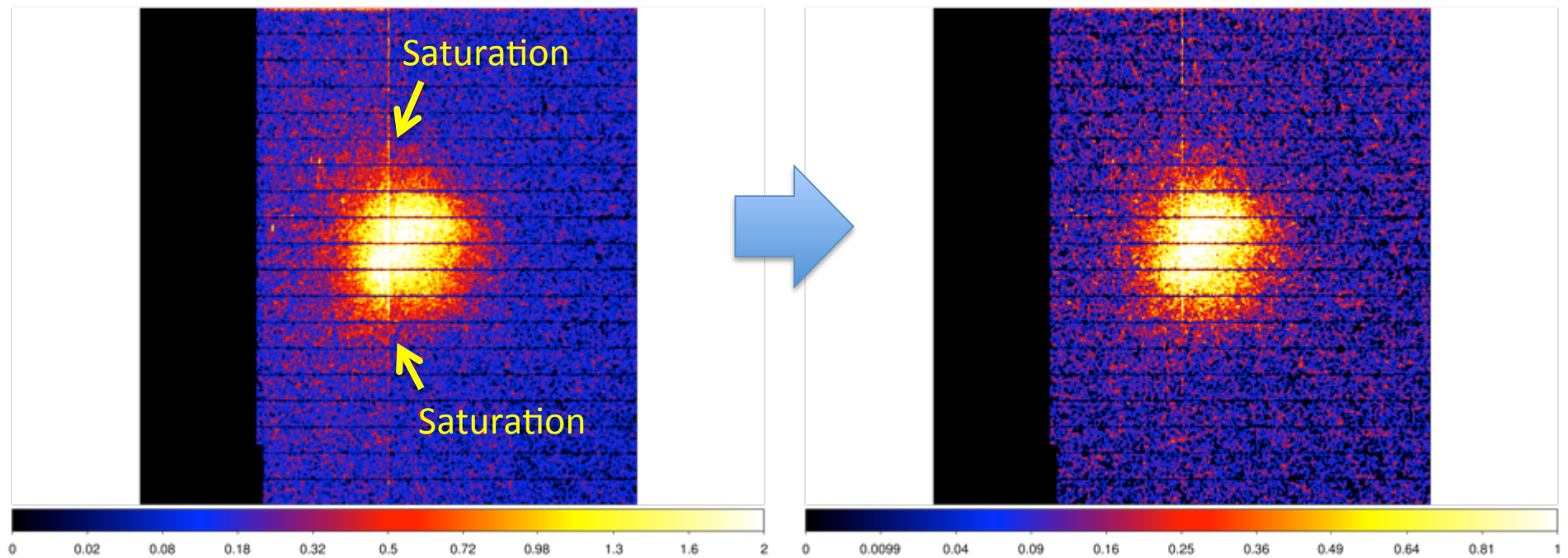
Effective exposure = 46 ks



Effective exposure = 18 ks



Application to W49B: XIS0 Images



W49B Spectra of XIS0 and XIS3

