Build and browse your IBIS/ISGRI database

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- Build your ISGRI database with a useful script
- Choose a source and extract all the available results

....hands on session on small data set !

Build your ISGRI database...

(1) Prepare your ascii file

[...]
scw/0199/019900550010.001/swg.fits[1]
scw/0199/019900560010.001/swg.fits[1]
scw/0199/019900570010.001/swg.fits[1]
[...]

(2) Build a group ONCE
(*og_create*)

og_ibis.fits

(3) Run the analysis ONCE!

Scw by scw analysis: repeat the above FOR EACH LINE!

(1) Prepare your ascii file

[...]
scw/0199/019900550010.001/swg.fits[1]
scw/0199/019900560010.001/swg.fits[1]
scw/0199/019900570010.001/swg.fits[1]
[...]

(2) Build N groups (*og_create*)

og_ibis.fits (019900550010)
og_ibis.fits (019900560010)
og_ibis.fits (019900570010)

(3) Run the analysis
N times

A useful shell script

We want to look at the latest data that became public (Rev. 019*):

- Images : 17-40, 40-100, 100-300 keV

  Sources brighter than 3σ (known or new!)

- Lightcurves: 17-40 keV, 300 sec
- Spectra: 17-500 keV, 17 bins

launch.sh and analysis.csh

I run the analysis on

- 10 revolutions
- 019* (680 pointings)
- Linux machine (FASTER)
- It took about 3 days and 12 Gb (cleaning!!!)

Let's see what the results look like

/unsaved_data/paizis/DEMO/obs/019500040010

but how do I extract the results in a user friendly way?

Browse your ISGRI database...

Images

Extract all fluxes from images: src_collect

ima_pick.pl (available on contributed scripts page)

/unsaved_data/paizis/DEMO/RESULTS

Warning on the NEW sources!!!!!

Look at the lightcurve of Cen X-3
(HMXRB, 2.1 d. orbital period,
eclipsing time: ~0.6 day)

Lightcurves (300 sec)

lc_pick (OSA 5): og_ibis.fits

create *list.lc.txt*;
convert it in “list.lc.fits” (*txt2idx*, OSA 5);

lc_pick source='Cen X-3'\
group=list.lc.fits+1 lc=cenx3.lc.fits emin="17" \
lcselect='E_MAX==40' instrument="ISGRI"

/unsaved_data/paizis/DEMO/cenx3.lc.fits

Spectra

spe_pick (OSA 5.0) og_ibis.fits

list.spe.txt
list.spe.fits (*txt2idx*, OSA 5);

spe_pick group="list.spe.fits[1]" source="Cen X-3"\
response=/unsaved_data/paizis/DEMO/isgr_rmf_grp_0016_log_
2.fits\
ancrfile=ic/ibis/rsp/isgr_arf_rsp_0010.fits \
rootname="CenX3" instrument="ISGRI"

/unsaved_data/paizis/DEMO/CenX3_single_pha2.fits
/CenX3_sum_pha.fits

Summary

- You can analyse ISGRI scw by scw
  - Very useful for large datasets
  - Build your own script or take mine.

- The results on your source will be “dispersed” :
  - There are tools to extract information from the results
    (src_collect, lc_pick and spe_pick)
  - This is true in any case! Even for a one-group analysis!!

The End